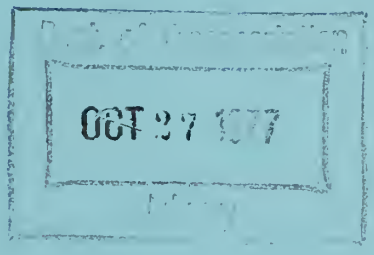
HE
18.5
.A39
no.
DOT-
TST-
77-70

77-70

ASIBILITY OF DEVELOPING LOW-COST SURES OF DEMAND FOR RURAL PUBLIC TRANSPORTATION



Final Report
December 1976

UNDER CONTRACT: DOT-OS-50127

Document is available to the U.S. Public through
the National Technical Information Service
Springfield, Virginia 22161

PREPARED FOR:
U.S. DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
Office of University Research
Washington, D.C. 20590

NOTICE

This document is disseminated under the sponsorship of the Department of Transportation in the interest of information exchange. The United States Government assumes no liability for its contents or use thereof.

HE
18.5
.A37
no.
DOT-
TST-
77-70

Technical Report Documentation Page

1. Report No.	2. Government Accession No.	3. Recipient's Catalog No.
DOT-TST-77-70		

4. Title and Subtitle	5. Report Date
Feasibility of Developing Low-Cost Measures of Demand for Public Transportation in Rural Areas	December 1976
	6. Performing Organization Code
	8. Performing Organization Report No.
7. Author(s) Bernard F. Byrne and Edward S. Neumann	
9. Performing Organization Name and Address Department of Civil Engineering West Virginia University Morgantown, West Virginia 26506	10. Work Unit No. (TRAIS)
	11. Contract or Grant No. DOT-OS-50127
	13. Type of Report and Period Covered
12. Sponsoring Agency Name and Address Office of University Research Office of the Secretary U. S. Department of Transportation Washington, D. C. 20590	Final Report - Phase I
	14. Sponsoring Agency Code OST/TST-60

15. Supplementary Notes

OST Technical Monitor: Robert H. Bruton, TPI-33

16. Abstract

The Appalachian region has many rural areas of limited accessibility. To improve the accessibility of the rural carless (poor, elderly, young, inform) public transportation has often been suggested. The objective of the research is to develop a low-cost methodology for determining latent demand for public transportation in rural areas, i.e., to develop a data base of key socioeconomic, highway network, and geographic variables which can be used to estimate latent demand along possible rural transit routes. Data have been collected on existing rural transit operations in Planning Region VI of West Virginia (Monongalia, Taylor, Marion, Harrison, Doddridge, and Preston counties) by means of an -on-off survey and an on-board questionnaire survey. Using these as indicators of demand, this information will be related to census data for the affected region to determine if a simplified modeling approach to estimate rural public transportation demand is feasible.

OCT 27 1977

17. Key Words	18. Distribution Statement
Demand, Rural, Transportation, low-cost methodology, Appalachia	Document is available to the U. S. Public through the National Technical Information Service, Springfield, Virginia 22161

19. Security Classif. (of this report)	20. Security Classif. (of this page)	21. No. of Pages	22. Price
UNCLASSIFIED	UNCLASSIFIED		

EXECUTIVE SUMMARY

Introduction

In the Appalachian area, the lack of adequate transportation services has been one of the principal problems of the poor and the elderly. In certain rural areas, fixed route schedule transit operating once or twice a week has been proposed. In order to allocate resources in the best manner possible, one would want to distinguish between those areas which show promise for providing rural transit ridership and those areas which show no promise. This calls for a method to estimate patronage on a route while it is being planned, before it is operated.

Problem Studied

The objective of the research is to study the feasibility of developing a low-cost methodology for assessing demand for public transportation in rural Appalachia. It represents an attempt to identify a data base of key socioeconomic, highway network, and geographic variables which the planner can use to forecast latent demand along potential rural transit routes and to estimate the level and quality of service that best satisfies that demand.

The first year effort covered in this summary consisted of data collection for use during a second year of model building. The scope of the effort was as follows:

1. To establish a data collection procedure for rural transit routes including an origin destination questionnaire and on-board survey.

2. To collect operational and ridership data on rural transit routes

in Northern West Virginia (Monongalia, Harrison, and Marion counties) including on-off and on-board counts.

3. To obtain data on the socioeconomic characteristics of the areas served by transit.

4. To prepare a final report which discusses the data collected; data collection procedures; the need for better data; special problems encountered, and recommendations on how data collection may be improved and sources of relevant government data may be improved.

Results Achieved

On-off counts and an on-board survey were conducted on 23 different rural transit routes in Harrison, Marion, and Monongalia counties during January, February, and March, 1976. Six of the routes operate five or six days a week and the other seventeen operate once or twice a week. Data collection relating to riders was straightforward and could be performed quickly and inexpensively by system operators on low volume routes. The rider survey was completed by 229 individuals, and results have been tabulated. Census data have been obtained from computerized files at the enumeration district level for the three-county area. Count 1 has provided data on the age-sex distribution of the population, home ownership, family size and availability of telephone. Count 5 has provided data on income, automobile ownership, and education level. All on-off counts and the rider survey data are identified by enumeration district to enable use of the enumeration district as the basic areal unit. In addition to census data, data have also been collected on the location of each zip code area and rural postal route and number of families served. The purpose of collecting the data is to obtain more recent estimates of population

densities along transit routes than is obtainable from census data and county highway maps. The zip code rural route areal unit does not appear usable as an alternative to the enumeration district because socioeconomic data are not available at this level of aggregation, and the areas vary widely in size. Nor are the enumeration district boundaries optimal for building demand models because they split communities of homogeneous characteristics. However, they can be aggregated with relative ease to become more useful areas if necessary.

Utilization of Results

The research has immediate significance relative to the transportation planning process in Region VI, the state, and Appalachia. Additionally, the characterization of riders through the use of the survey has national significance in that it permits comparisons of such characteristics on a nationwide scale to determine if the second year effort will be exportable nationwide. The second year effort will be one of model building. Criteria placed on the models to be built are:

1. They should be short-range in nature since planning is for conventional bus, which is quite flexible.

2. Methods should use easily acquired data, in particular census data, since planners in rural areas tend to not have access to sophisticated data files.

3. Methods should be amenable to hand calculations, since a computer is not always available to planners in rural areas.

Specifically, data collected during the first year will be utilized to determine the feasibility of developing either a cross-classification, linear regression, simplified accessibility model or some combination of

these models as a basis for estimating demand for rural transit. The models will be tested on additional transit routes in West Virginia if they are established at an early date.

Conclusion

The necessary data have been collected to build and test a series of low-cost models of demand for rural transit. The data include on-off on-board counts, a rider survey, enumeration district census data and postal route zip code area data. Further research will indicate which of the data are most useful and reliable for the modeling objectives.

TABLE OF CONTENTS

Page

EXECUTIVE SUMMARY i

LIST OF TABLES viii

LIST OF FIGURES x

Chapter

I. INTRODUCTION 1

Introduction 1

First Phase Results 3

Second Phase Analysis 4

Literature Review 10

II. RURAL TRANSIT SERVICES IN NORTHERN WEST VIRGINIA . . . 11

Monongalia County 11

Marion County 15

Harrison County 15

Intercity Services 15

Analysis of Ridership Characteristics 21

Statistical Analysis of Daily Ridership 23

Selected Route Data Analysis 29

Riders per Dwelling Unit per Route Day 32

Comparisons with Other Programs 32

III. ON-OFF COUNTS 39

Purpose 39

Data Collected 39

TABLE OF CONTENTS (cont.)

Page

Chapter

Data Collection Procedure 40

Allocation from On-Off Counts to Enumeration Districts 40

Description of Enumeration District On-Off Tables . . 42

Special Problems 50

Improvements 50

IV. RIDER SURVEY 51

Purpose 51

Design 51

Preliminary Tabulations 58

Special Problems 62

V. CENSUS DATA 66

Purpose 66

Background 66

Census Data Collected 71

Additional Census Related Data 73

Need for Better Data 76

Special Problems 76

Sources of Relevant Government Data Improvement . . . 76

VI. POSTAL RURAL ROUTE DATA 78

Purpose 78

TABLE OF CONTENTS (cont.)

Page

Chapter VI (cont.)

Data Collected 78

Data Collection Procedures 85

Need for Better Data 86

Special Problems 86

VII. SUMMARY AND CONCLUSIONS 88

REFERENCES 91

APPENDICES

A. RIDER SURVEY QUESTIONNAIRE RESULTS A-1

B. ON-OFF COUNTS BY ROUTE B-1

C. CENSUS DATA C-1

LIST OF TABLES

Table		Page
1.	Selected Route Characteristic Data	14
2.	Selected Route Characteristics Data - Harrison County	18
3.	Average Daily Ridership by Month per Route Day - Operated at 5 Days/Week and 6 Days/Week	26
4.	Average Daily Ridership by Month per Route Day - Operated at 2 Days/Week and 1 Day/Week	26
5.	Average Daily Ridership by Month	27
6.	Statistical Tests for Daily Routes in Monongalia and Harrison Counties	30
7.	Riders per T.D.U.$_{15}$	35
8.	Rural Transit Programs with Daily Service and General Clientele: Selected Characteristics	37
9.	Selected Route Ridership Data	38
10.	Average Daily Ridership for Daily Routes - Monongalia County	44
11.	Average Weekly Ridership for Less Than Daily Routes - Monongalia County	45
12.	Average Daily Ridership for Daily Routes - Marion County	46
13.	Average Weekly Ridership for Less Than Daily Routes - Marion County	47
14.	Average Daily Ridership for Daily Routes - Harrison County	48
15.	Average Weekly Ridership for Less Than Daily Routes - Harrison County	49
16.	Survey Returns, Monongalia County	54
17.	Survey Returns, Marion County	55

LIST OF TABLES (cont.)

Table		Page
18.	Survey Returns, Harrison County	56
19.	Survey Returns, Harrison County, Central, West Virginia Community Action Association	57
20.	Trip-Making Characteristics	59
21.	Postal Rural Route Data for Harrison County	79
22.	Postal Rural Route Data for Monongalia County	80
23.	Postal Rural Route Data for Marion County	81

LIST OF FIGURES

Figure		Page
1.	Typical Cross Classification Model with a Dependent Variable of Trabsit trips per Household per Week	7
2.	Transit Routes - Region VI	12
3.	Monongalia County	13
4.	Marion Count	16
5.	Harrison County	17
6.	Inter-City Public Transportation Routes	20
7.	Average Daily Ridership by Month	22
8.	Average Daily Ridership by Day of Week	24
9.	Average Daily Ridership by Month	25
10.	Average Daily Ridership vs. Route Length	33
11.	Average Daily Ridership vs. T.D.U.	33
12.	$T.D.U._{15}$/Route Mile Versus Ridership/Route Mile	34
13.	Sample Form for On-Off Counts	41
14.	Sample Form for Enumeration District On-Off Averages	43
15.	Rider Survey Questionnaire	52
16.	Age Sex Distribution	60
17.	Frequency of Ridership	61
18.	Enumeration Districts - Marion County	67
19.	Enumeration Districts - Monongalia County	68
20.	Enumeration Districts - Harrison County	69
21.	Census Data Example	72
22.	Age Sex Distribution	74

LIST OF FIGURES (cont'd)

Figure		Page
23.	Census Data Example	75
24.	Rural Route Zip Code Areas - Harrison County	82
25.	Rural Route Zip Code Areas - Monongalia County	83
26.	Rural Route Zip Code Areas - Marion County	84

Chapter I

INTRODUCTION

Introduction

In the Appalachian area, as well as in the country as a whole, a major problem of the poor and elderly has been the lack of adequate transportation services. In certain areas, fixed route schedule transit operating once or twice a week has been proposed. In order to allocate resources in the best possible manner, it is necessary to distinguish between those areas which show promise for rural transit ridership and those which do not. It is also desirable to make at least some distinction before a system is operated so that a preliminary estimate of the necessary size of the system and its financial needs may be made. This, then, calls for a method to estimate patronage on a system on a route-by-route basis while it is being planned, before it is operated.

The method should relate to short-range planning needs rather than long-range needs. Conventional bus operations in rural areas are very flexible and can be expanded, contracted, or otherwise adjusted almost immediately to conform to changes in demand. Further, rural bus transportation can be expected to have only minor long-range impacts on land use development. Short-range planning methods are vitally important for adequate transit planning, however.

Every rural area has disadvantaged citizens who lack even the basic mobility which is essential to their ability to live relatively healthy, full lives. Travel forecasting methodologies are required to plan rural systems to meet their needs. Such a method must be usable by those who

actually will be planning the route. Transit planners in such areas typically do not have access to sophisticated data files or computers and may be unfamiliar with the theoretical basis of demand modeling. Therefore, in order for them to be accepted as planning tools, such methods should be conceptually satisfying and be usable with easily acquired data (e.g., census data). Additionally, such methods should not require access to a computer, but be compatible with hand calculations.

The objective of this research is to develop and verify a model which may be used to estimate patronage on rural transit routes using data sources easily available to planners in rural areas. That is, the data required should be available locally, or be easily and inexpensively obtainable from state or regional agencies without the need for massive collection efforts. The model structure should have wide applicability in terms of identifying the key causal variables. Currently, models of this type could have considerable impact on the many new transit services and expansions being planned throughout the country. The models could assist in estimating equipment needs and revenues and help quantify benefits to the public so that benefit-cost analyses could be conducted.

The methodology employed in developing such a model is divided into three phases. The first phase, which is the subject of this report, involves the collection of data on ridership and rider characteristics on rural transit routes in Northern West Virginia through the use of on-board questionnaires and the collection of census and related data for the areas served by the transit routes. The second phase is the model building phase, in which it is proposed that three separate types of models be calibrated and compared for their ability to accurately predict ridership. The three models would be a cross-classification model, a simple

accessibility model and a simple linear model. The third phase would be a model verification phase, in which the models developed would be tested in various parts of the country to determine the extent to which they are applicable and to further refine them.

First Phase Results

The specific tasks of the first phase of the research are outlined below:

Task 1 - To establish a data collection procedure for the rural transit routes including an origin-destination questionnaire and on-board survey.

Task 2 - Utilizing the procedure developed in Work Task 1, to collect data on certain rural transit routes in Northern West Virginia including on-off and on-board counts.

Task 3 - To examine sources of data, such as the census, in order to obtain data on the soceioeconomic characteristics of the areas served by transit for use in the second year modeling effort.

Task 4 - To prepare a Final Report containing the data collected; data collection procedures; if necessary, the need for better data; special problems encountered; and recommendations on how data collection may be improved and how sources of relevant government data may be improved.

This report has been organized in the following fashion:

The remainder of Chapter I contains a discussion of the models to be used in the second phase and a brief literature review.

Chapter II presents a description of the route survey and the results of early data collection efforts.

Chapter III presents results of the on-off counts.

Chapter IV presents results of the rider survey.

Chapter V presents results of the census data collection effort.

Chapter VI presents results of the post office data collection effort.

Chapter VII presents the summary and conclusions.

Second Phase Analysis

In order to define the types of data needed and to establish the framework within which the data will be used, the expected second phase effort is briefly described below.

Demand modeling is an attempt to capture the mathematical relationship between sets of variables and ridership in keeping with a specific theoretical orientation toward the decision-making process of individuals, but constrained by the practical need to create models which are comprehensible and compatible with the data computation capabilities of planning agencies. This latter requirement oftentimes necessitates that a trade-off be made between theoretical realism (a large number of variables and interactions) and precision (error of forecast) in the modeling process.

The second phase will address methods which are simple and amenable to hand calculations by smaller planning agencies (the rural regional planning agency or county-level agency). The general modeling approach will be to start with the simpler models and proceed toward more complex theoretical models. Increasing complexity is structured in terms of (1) disaggregation of data into successively finer intervals within variables; (2) increasing the number of prediction and predicted variables, and (3) use of more complicated mathematical relationships.

Demand for rural transit is theorized to be a function of three sets

of variables: (1) the socioeconomic characteristics of groups of individuals which in large measure define the reasons and needs for travel, and act to constrain travel choices; (2) the transit system variables which represent the supply curve and include time of day and frequency of transit srrvice, comfort, reliability, areal coverage, and price; and (3) accessibility variables related to the availability of desirable travel destinations and the time expenditure necessary to reach them.

Prediction variable sets shall contain the following:

1. Socioeconomic (basis of needs and constraints on modal choice)
   a. Age
   b. Car ownership status of household
   c. Income
   d. Household size
   e. Driver's license
   f. Education
   g. Sex
   h. Occupancy status
   i. Availability of phone

2. Transit system variables
   a. Frequency of transit service
   b. Time of day when service is available
   c. Route coverage
   d. Price

3. Accessibility variables
   a. Nearness of route stops to origin and final destination
   b. Length of time spent walking to bus, plus waiting, plus time spent on bus, plus time to final destination

The predicted demand variables to be considered by the methodology shall include:

(a) Frequency of ridership (total ridership/unit time)

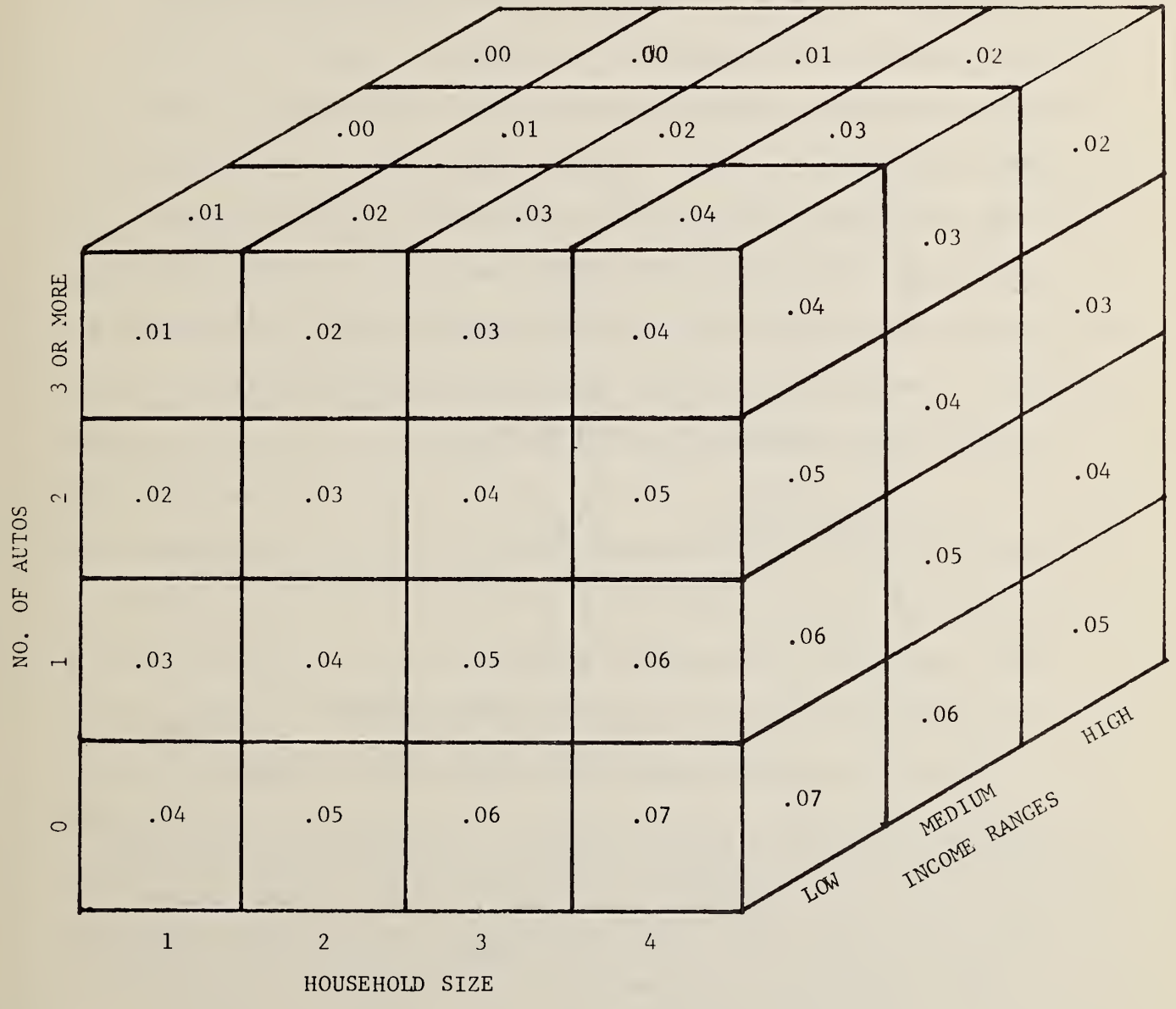
(b) Trip purpose

The United States Census will be the primary source of input data. Generally speaking, as the areal unit of census data decreases in size from county to magisterial district (tract) to enumeration district (block), the availability of data decreases and the error increases. This is due

to both the personal sensitivity of the data and the small proportion of households asked to provide certain census data. The former consideration leads to suppression of data and the latter to larger estimation errors. Thus, the form and reliability of demand models are affected by the use of census data. Certain socioeconomic variables may not be usable at the finest level of areal disaggregation. The second phase effort shall attempt to determine the appropriateness of using socioeconomic variables at different levels based on probable error.

It is anticipated that three distinct types of models will be tested. These would be a cross-classification model, a simplified accessibility model, and a simple linear model.

The first model to be considered is a cross-classification in which trip rates, the dependent variable, are determined by discrete values of independent variables. A simple example of a cross-classification model is shown in Figure 1. This model has as a dependent variable transit trips per household per week and as independent variables household size, auto ownership, and income. Each independent variable has a discrete value or discrete range of values. The model itself resembles a rectangular parallelepiped made up of a number of cells, each cell representing a combination of values of the independent variables. In each cell is a number which represents the number of trips per household per week that each household with the characteristics describing that cell makes. To use the model the analyst determines, for each small areal unit, the number of households that fit each cell and multiplies by the corresponding trip rate. These results are then all added together, to produce an estimate of trip-making for each unit. The classification model lends itself quite readily to analysis of variance. Analysis of variance can produce a



TYPICAL CROSS-CLASSIFICATION MODEL WITH A DEPENDENT VARIABLE OF TRANSIT TRIPS PER HOUSEHOLD PER WEEK

FIGURE 1

cross-classification model which will have significant differences in trip rates for each of the levels of independent variables, so that extraneous variables may be eliminated and the proper breakdown to ranges of significant independent variables found.

The second model to be considered is a simple accessibility model. This would attempt to relate ridership to distance or travel time from a focal point of a route, typically a larger city or town in which a route terminates. The first step is to determine if distance or travel time <u>is</u> significant in ridership. This can be established in a number of ways, e.g., regression analysis or analysis of variance. If it turns out to be significant, then the next step is to find the proper functional relationship, i.e., linear, quadratic, log, exponential, or inverse power.

A simple linear model would be of the form

$$Y = a_0 + a_1x_1 + a_2x_2 \ . \ . \ . + a_nx_n$$

where Y = Trip rate

a_0 = Constant

$x_1 \ . \ . \ . \ x_n$ = Socioeconomic variables

$a_1 \ . \ . \ . \ a_n$ = Coefficients of $x_1 \ . \ . \ . \ x_n$

The application of linear regression analysis to such models is well documented and would be the approach utilized here. Stepwise linear regression offers an improvement in finding relationships. Also well documented are methods of determining goodness of a fit for a particular linear regression model. (Not so well documented are means of testing the other models. The best means of comparison may well be some ratio of explained variance to total variance or explained sum of squares to total sum of

squares.)

The data contained in this report will enable models to be developed without additional data collection. However, the models should be tested on routes different from those utilized in the model building phase of the research. This would assist in resolving issues concerning the generality of the models. One issue of generality is how universal the values of the model parameters will be, i.e., can the trip rates and regression coefficients developed on a small number of routes in Northern West Virginia be applied elsewhere? Experience to date in travel demand forecasting indicates that parameters and values, while remaining confined to ranges that seem reasonable, can vary by amounts large enough to necessitate separate travel studies and model building efforts from region to region. It is premature to conclude that values and parameters generated from data in this report would have universal applicability. A second issue of generality concerns the structure of the models and the kinds of data necessary to calibrate the models. It is felt that the data collected and presented in this report will be more than adequate to determine a good model structure. In fact, it is believed that the report contains considerably more data than actually would be needed once the best models are determined. Assuming that Phase II succeeds in identifying the causal and constraining influences on demand, and the appropriate mathematical structure for systematically including them in forecasting models, then future data collection efforts can be designed to replicate the studies elsewhere at low cost. As stated at the beginning of the chapter, a major objective of the research is to develop a methodology for use by planners with limited capabilities--staff, finances, and technological expertise.

Literature Review

Estimating demand for rural public transportation services is a relatively new area of research, mostly because rural mobility problems have only recently been acknowledged and programs devised to attempt to solve these problems. Nevertheless, some work has already been done in this area.

Most approaches use a basic trip rate approach, either based on population as a whole or elderly population. Briggs (1) used such an approach in Texas; Lindsay (2), in the Cumberland Plateau in Virginia and RRC International (3) for Chautaugua County, New York. Popper (4) estimates for a given county that rural transit demand approximates one annual ride per capita. Burkhardt (5) provides estimates ranging from 0.3 to 2.4 annual rides per capita. Burkhardt (6) also remarked that more sophisticated models are being prepared based on data collected in Pennsylvania. Burkhardt et al. (7, 8) have also done excellent work characterizing transportation by the rural poor.

Other methods of estimating demand for small transit systems that may be applicable to rural transit systems include a simple modal split, such as by Hillegass (9); carefully prepared survey, e.g., Anderson and Hoel (10); and the Delphi method using social service providers as reported by Hauser (12). A critique of many methods is presented by Kidder (13).

In examining each of these works, it appears that the estimation of demand for rural public transportation is still at a primitive stage. The most promising method appears to be that reported by Burkhardt (6) as a part of the Pennsylvania study. No methods seem to be available to estimate demand on a route-by-route basis.

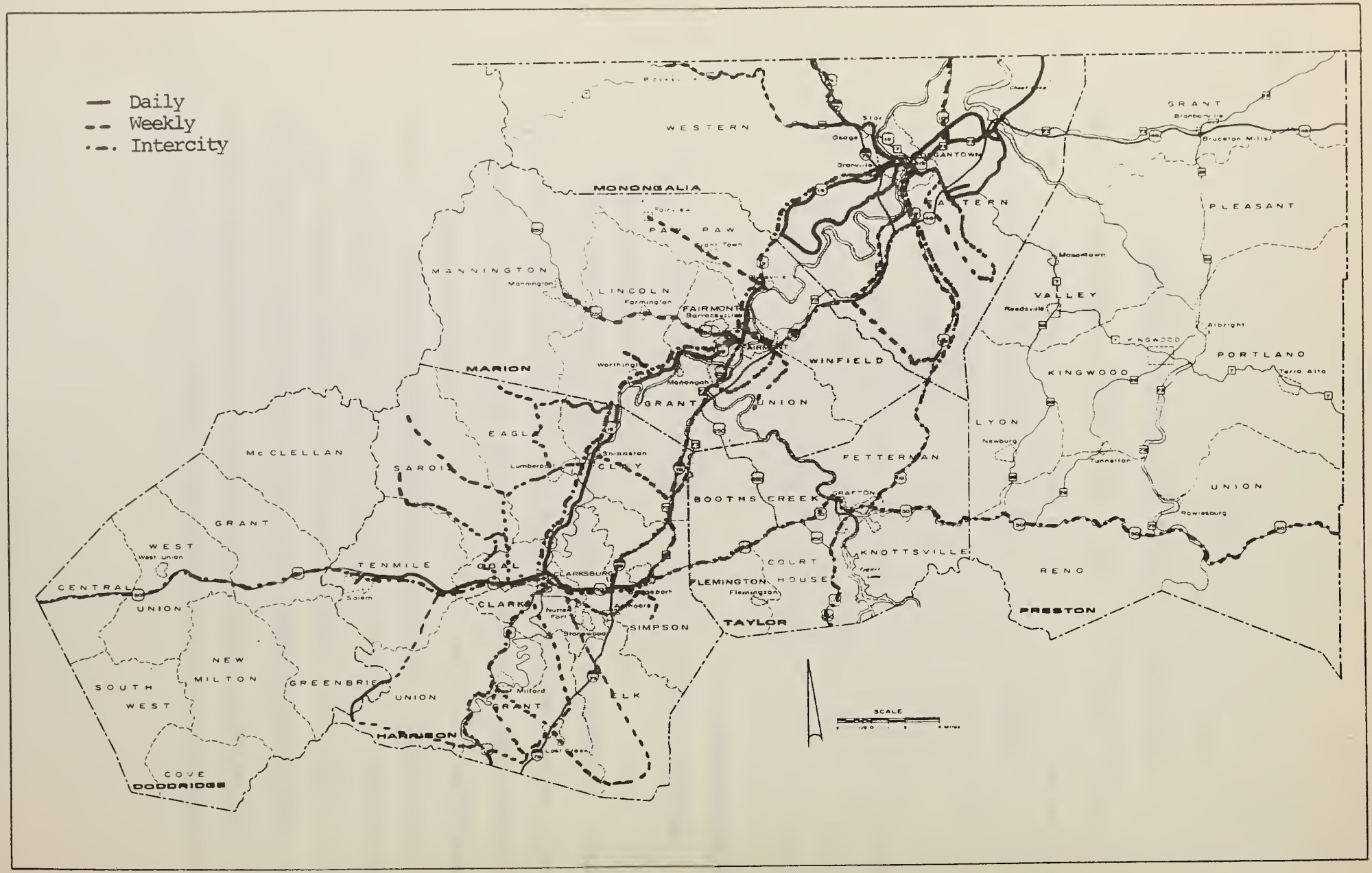
Chapter II

RURAL TRANSIT SERVICES IN NORTHERN WEST VIRGINIA

Data were collected on rural transit routes in the Region VI Planning and Development Council area of Northern West Virginia (comprised of the counties of Monongalia, Marion, Harrison, Doddridge, Preston, and Taylor). Four separate fixed route, fixed schedule rural public transportation services of a local nature are offered in three of the counties. Three intercity services on four separate routes are also offered. Shown in Figure 2 is a general map of all the routes of all the fixed route operations in the region. Each of these will be discussed in turn.

Monongalia County

Monongalia County Transit operates seven routes, four on a daily basis, two twice a week, and one once a week. Routes are as shown in Figure 3. Table 1 shows information for each route including route length, average daily ridership, number of days per week that the route is operated, and the number of round trips per day. All routes except Cassville are quite long, 19 miles and over, the longest being Blacksville, 38 miles. Patronage also varies highly from a low of 6.6 per day for the Blacksville route to a high of 210 per day for the Cassville route. Mercedes-Benz 17-19-passenger buses are used throughout except that a GM 33-passenger bus is used on the Cassville run. A central station is operated at the Walnut Street PRT Station in Morgantown. Buses are maintained at the county garage near Westover.



TRANSIT ROUTES - REGION VI

FIGURE 2

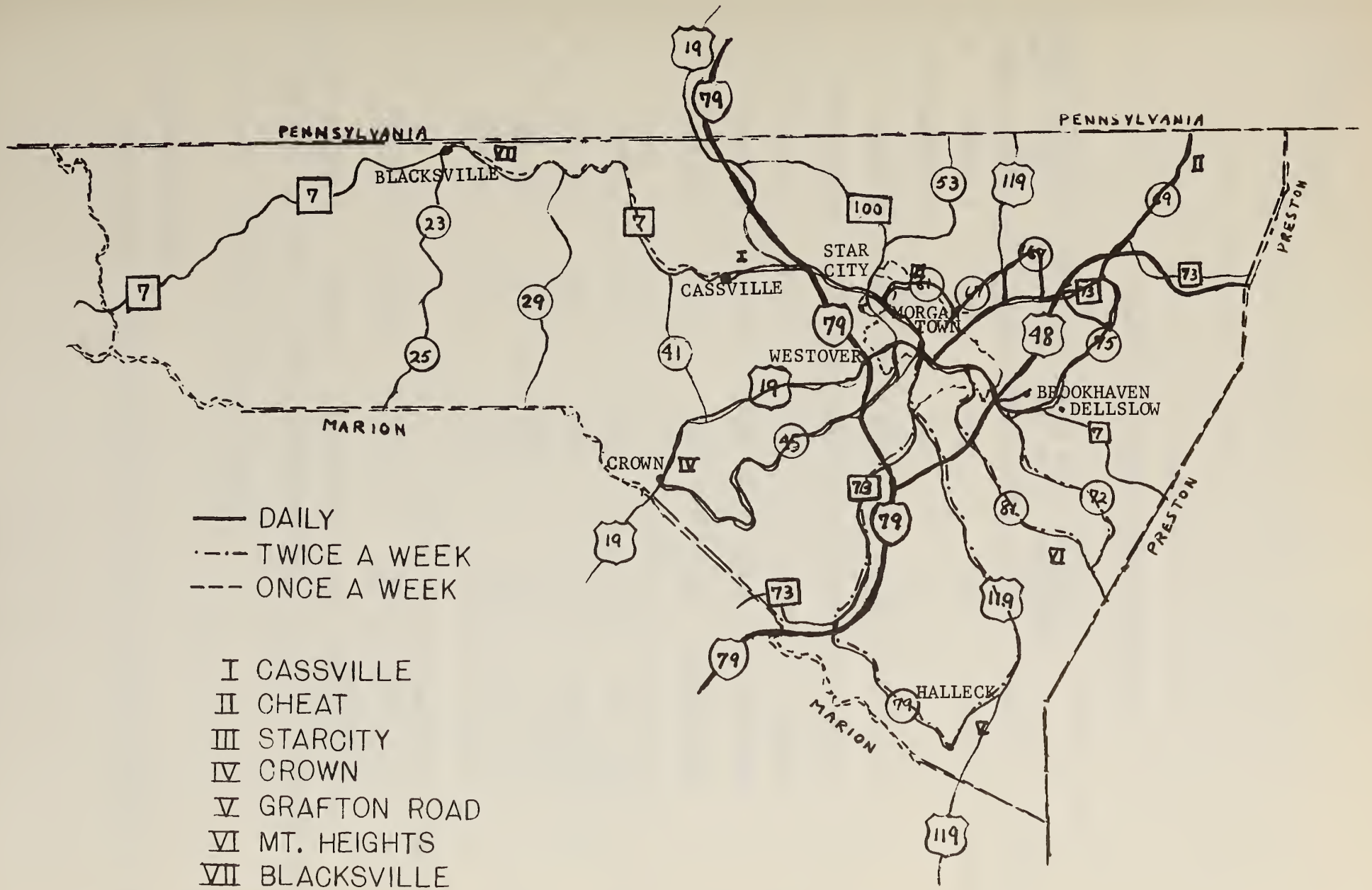


FIGURE 3: MONONGALIA COUNTY

TABLE 1

SELECTED ROUTE CHARACTERISTIC DATA

County	Route	Length of Route in Miles	TDU's Within 15 min Walking Distance	Ave. Daily Ridership/ Route Day	Frequency of Service	Round Trips/ Day
Monongalia	Cassville	6.9	312	210.6	6 days/wk	11
	Cheat	27.0	1057	74.7	6 days/wk	5
	Star City	26.1	1066	94.7	6 days/wk	10
	Crown	22.3	604	42.1	6 days/wk	2
	Grafton	27.8	543	15.7	2 days/wk	2
	Mt. Hts.	19.0	523	12.9	1 day/wk	2
	Blacksville	38.1	520	6.6	1 day/wk	2
Marion	Fairview	12.5	1015	13.3	1 day/wk	2
	Mannington	11.7	1605	23.2	1 day/wk	2
	Kingmont	4.4	599	11.3	1 day/wk	2
	Carolina	9.9	522	16.3	1 day/wk	2
Harrison	Bridgeport-Wolf Summit	11.3	2323	260.9	6 days/wk	9
	Clarksburg-Enterprise	13.5	1473	35.4	5 days/wk	3

Marion County

Six routes which can be considered rural transit services are operated by the Fairmont-Marion County Transit Authority, as shown in Figure 4. Five operate weekly and one daily. The same information shown for Monongalia County routes is shown for Marion County routes in Table 1 also. Ridership tends to be lower than in Monongalia County, averaging between 11 and 23 passengers per day on the weekly runs. Mercedes-Benz buses are run throughout.

Harrison County

Two separate operations exist in Harrison County. The larger in terms of ridership is the Central West Virginia Transit Authority, which runs only two routes which may be considered rural, the Wolf Summit portion of the Clarksburg-Wolf Summit run, and the Clarksburg-Enterprise route as shown in Figure 5. Both operate daily, the Wolf Summit route operating on Saturday also. Both operate with regular city transit buses.

The other operation is strictly rural in nature and is operated by the Central West Virginia Community Action Association which in total services 10 routes on a once a week basis. Two routes are served per day. The map of routes is shown in Figure 5. All routes are operated twice each day they are run. One trip on each route leaves at 8:00 a.m. from the County Courthouse and one at 1:45 p.m. The morning run is meant to bring people into Clarksburg and the evening one to take people out. Ridership information on these routes is shown in Table 2. They are operated with 15-passenger van-type vehicles.

Intercity Services

Three regularly scheduled intercity carriers presently operate in the

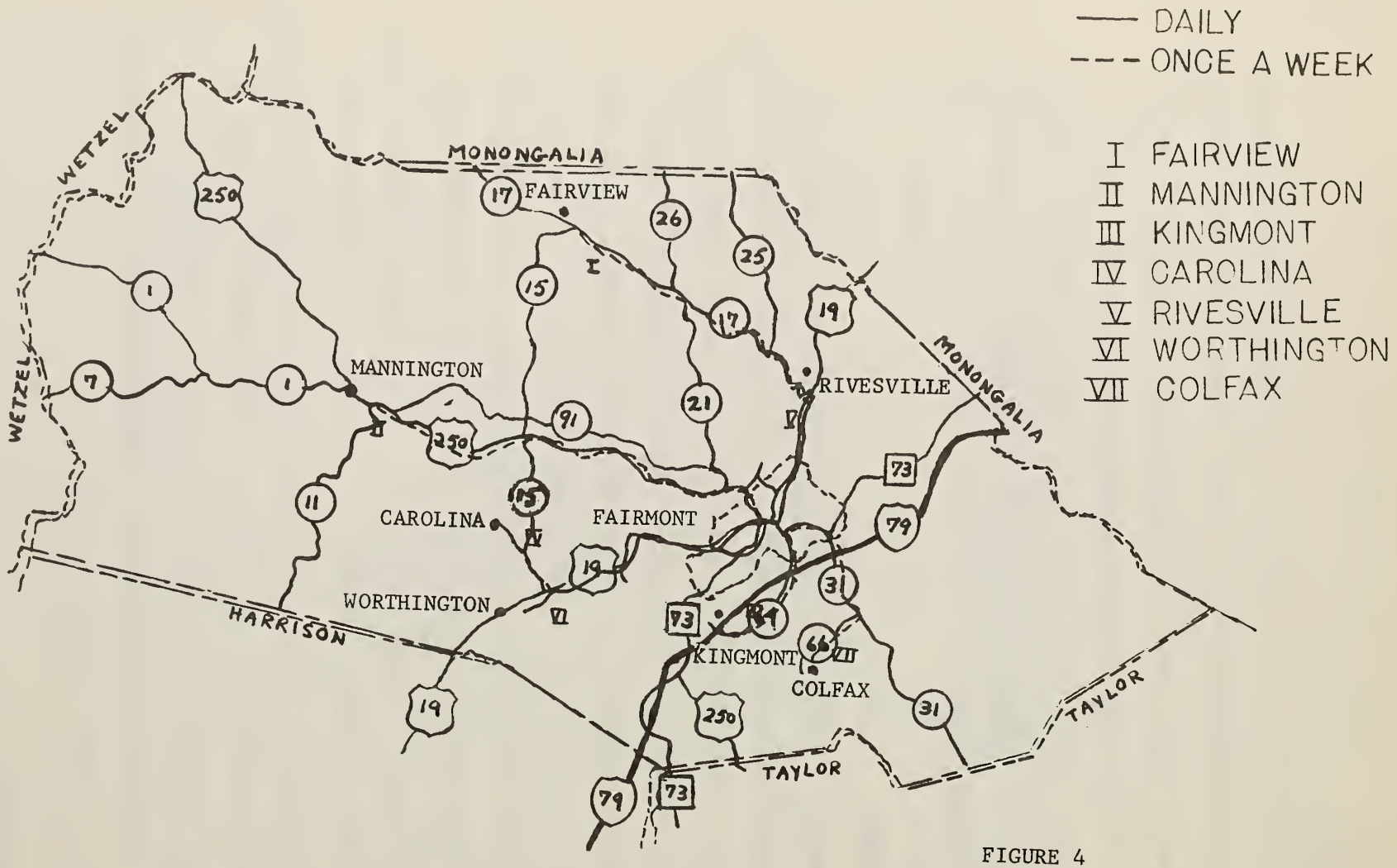
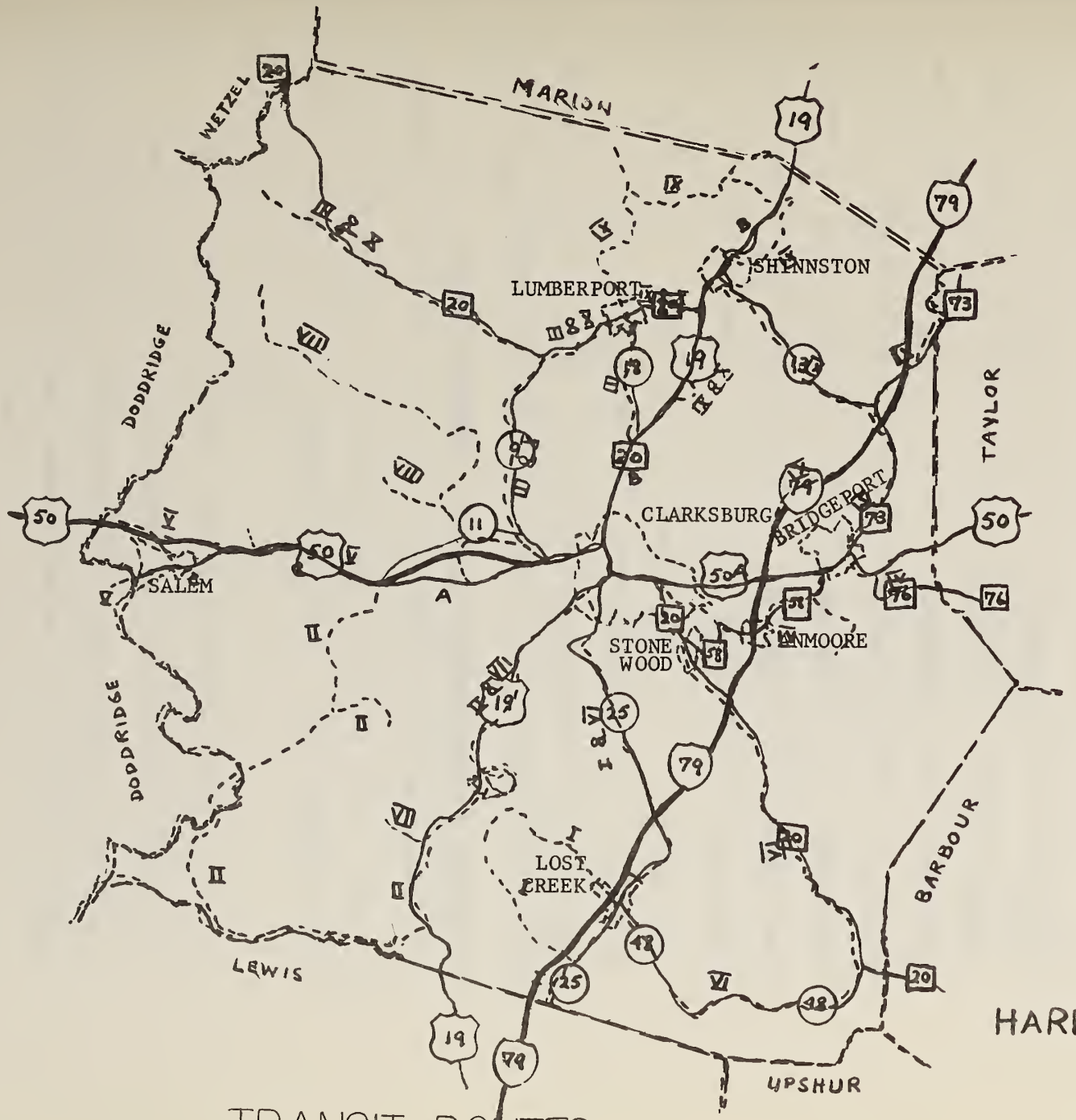


FIGURE 4

MARION COUNTY

TRANSIT ROUTES



—— DAILY
- - - ONCE A WEEK

CENTRA

A BRIDGEPORT
WOLF SUMMIT

B ENTERPRISE

C SALEM

COMMUNITY ACTION ASSOCIATION

I, II MONDAY
III, IV TUESDAY
V, VI WEDNESDAY
VII, VIII THURSDAY
IX, X FRIDAY

FIGURE 5

HARRISON COUNTY

TABLE 2

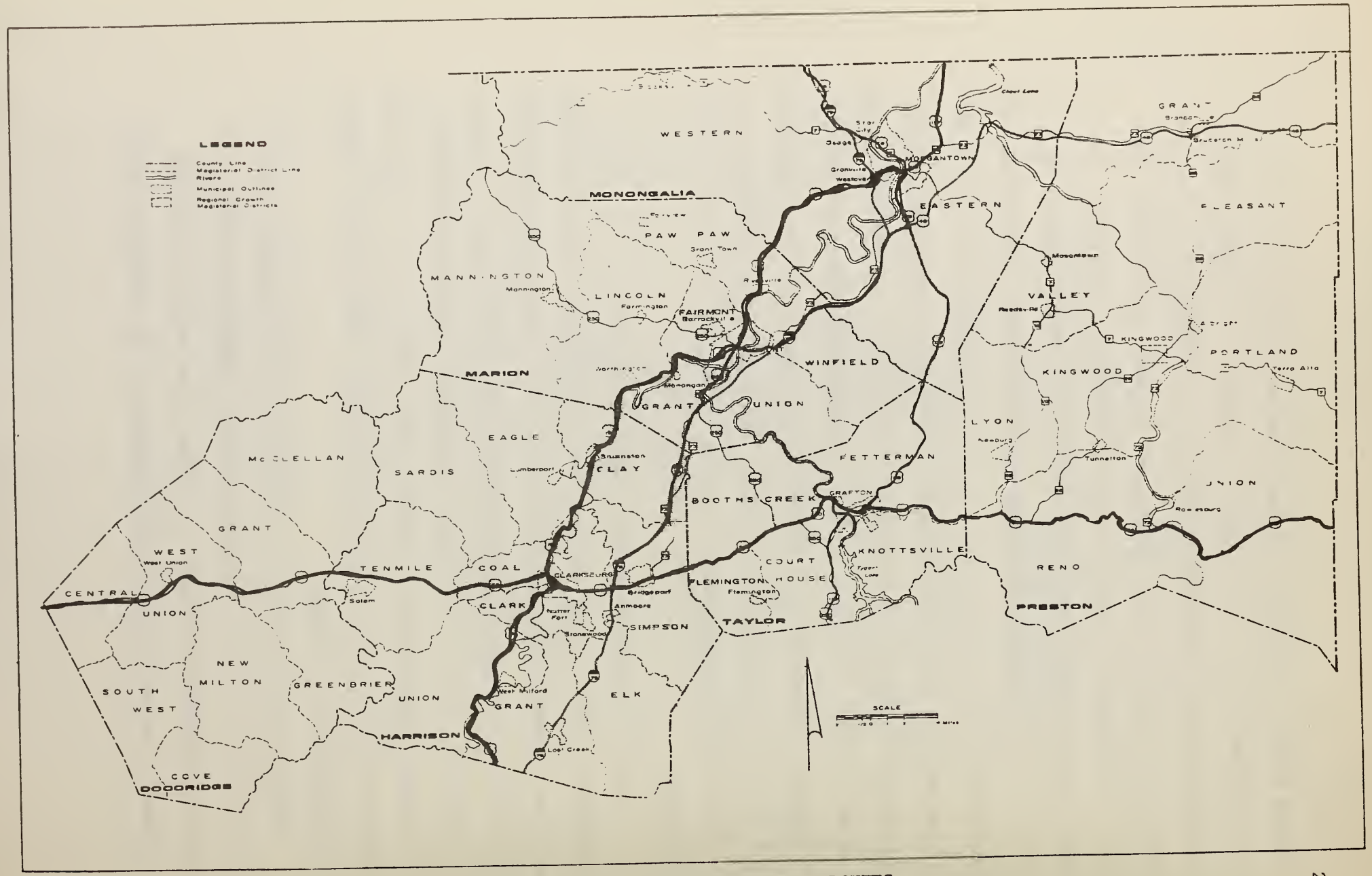
Day	Route	Average Ridership (passengers/day)
Monday	McWhorter	17.1
Monday	Kincheloe	9.0
Tuesday	Wallace	15.8
Tuesday	Route 73	9.9
Wednesday	Johnstown	15.0
Wednesday	Route 23	11.9
Thursday	Sardis	14.9
Thursday	Laurel Valley	6.5
Friday	Wyatt	14.4
Friday	Wallace	16.6

SELECTED ROUTE CHARACTERISTICS DATA - HARRISON COUNTY

Region VI area: Greyhound, Overland Commuter of Elkins, and Central Cab Co. of Waynesburg, Pa. (see Figure 6). Parts of two longer intercity Greyhound routes operate through the region, Washington-Cincinnati and Pittsburgh-Charleston. The Washington-Cincinnati route operates over U.S. 50 throughout its entire length in the region. Two buses a day in each direction operate through Clarksburg and continue over the entire route. West of Clarksburg one schedule a day in each direction operates over new U.S. 50 and one a day over old U.S. 50. From the east one additional schedule a day from Washington terminates in Clarksburg and one additional schedule a day to Washington originates in Clarksburg. From the west another additional schedule a day from Parkersburg and Columbus terminates in Clarksburg and one additional schedule a day to Parkersburg and Columbus originates in Clarksburg. Therefore, three schedules a day in each direction operate over the entire route, two of which are through schedules.

In the north-south direction, Greyhound operates over U.S. 119 to Morgantown from the north. From Morgantown, Greyhound operates to Fairmont and Clarksburg over both U.S. 19 and I-79. Five regularly scheduled daily services operate in each direction (additional service is operated on weekends). North of Clarksburg three schedules each way operate over I-79 between Morgantown and Clarksburg and two over U.S. 19. Three daily schedules operate south of Clarksburg to Weston. These continue through to Morgantown and Pittsburgh.

Another intercity service is offered by Overland Commuter with airport limousine vehicles. This operates in a triangle from Elkins to Weston to Morgantown to Elkins via Grafton. The service is operated clockwise in the morning and counterclockwise in the afternoon, taking



INTERCITY PUBLIC TRANSPORTATION ROUTES

FIGURE 6

six hours for the completion of a circuit. Overland Commuter is restricted from carrying passengers whose entire ride is between Morgantown and Weston or intermediate points over U.S. 19.

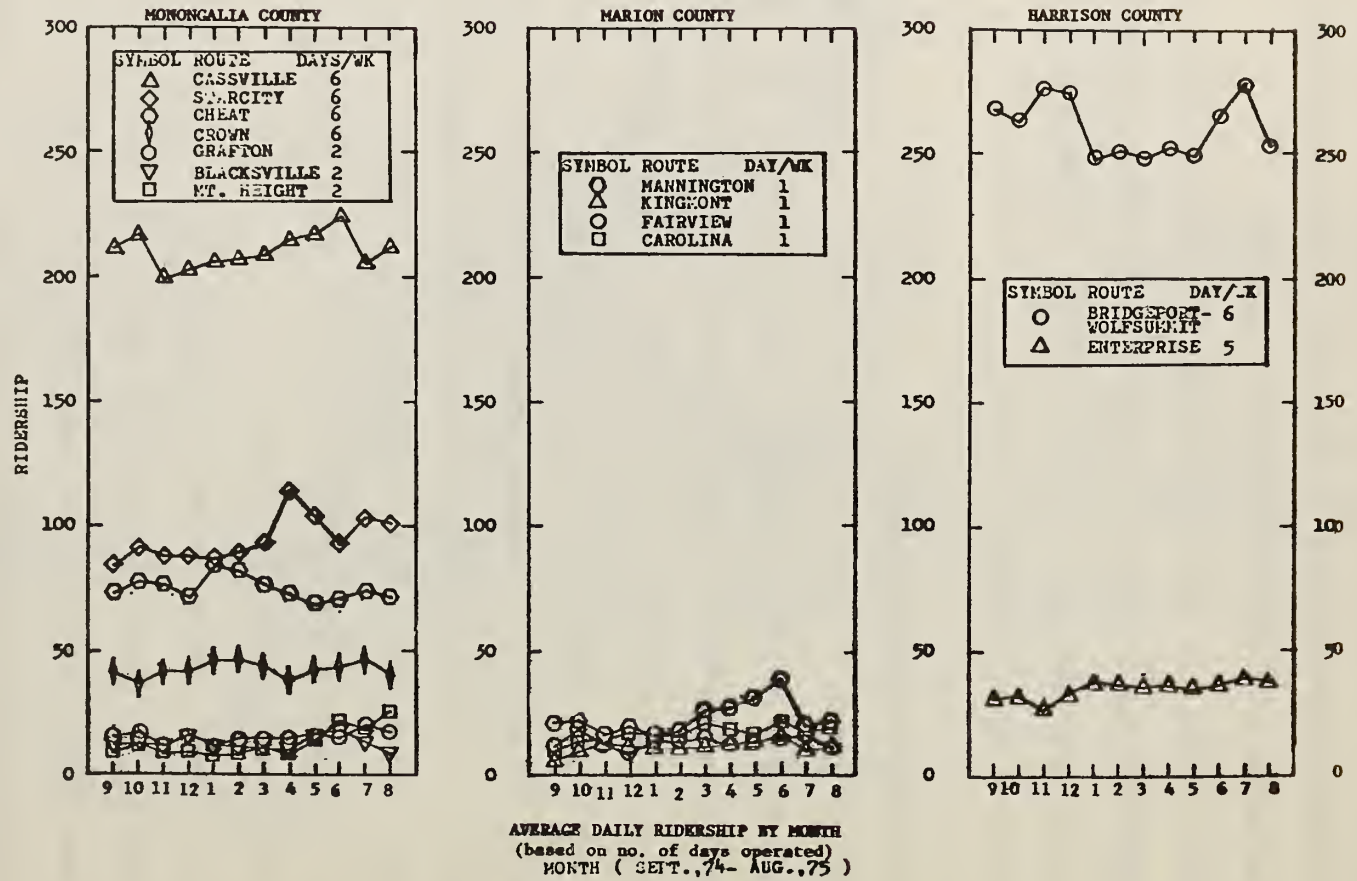
The third service is by Central Cab Co. of Waynesburg which operates between Morgantown and Steubenville, Ohio, via Washington, Pennsylvania, and proceeds through the region over U.S. 19 north to Morgantown. Two trips a day each way are offered.

Analysis of Ridership Characteristics

With daily counts of ridership of rural transit routes in Monongalia, Marion, and Harrison counties (described previously except for Community Action Association routes) collected between September, 1974, and August, 1975, ridership characteristics are analyzed. The discussion is supplemented by graphs and tables. The graphs and tables are set up on two bases, yearly (by month), and weekly (by day of the week). The purpose of the analysis is to trace ridership trends, to compare ridership among the routes, and to determine if there exists a given period of a year or certain day of a week in which ridership is greater than usual for any or all routes in the three selected counties.

The first three graphs are set up by month for the three counties as shown in Figure 7. Each graph represents the average daily ridership by month in each county. Intuitively, one might expect to find ridership follows a readily identifiable pattern for all routes. For instance, it was expected that there would be more ridership in the month of December than in other months for all routes because of traditional Christmas shopping. However, only a couple of routes show such a tendency. On the majority of the studied routes, no distinct trend of ridership was detected

FIGURE 7



AVERAGE DAILY RIDERSHIP BY MONTH
(based on no. of days operated)
MONTH (SEPT.,74- AUG.,75)

by month. In general, demand for rural transit services for the three counties does not display any significant seasonal trend.

Shown in Figure 8 are three graphs which show ridership by day of week for each county. In general, ridership tends to be high at the beginning of each week and slightly decreases towards the end of the week. There is a tremendous drop of ridership on Saturday for all routes which are operated six days a week, presumably because work trips made during the week are not made on Saturday and because welfare offices and medical clinics are closed on Saturday. As for those routes which are being operated twice a week, no particular trend can be observed. For those routes which are being operated once a week, it is impossible to analyze the ridership characteristics in the same manner.

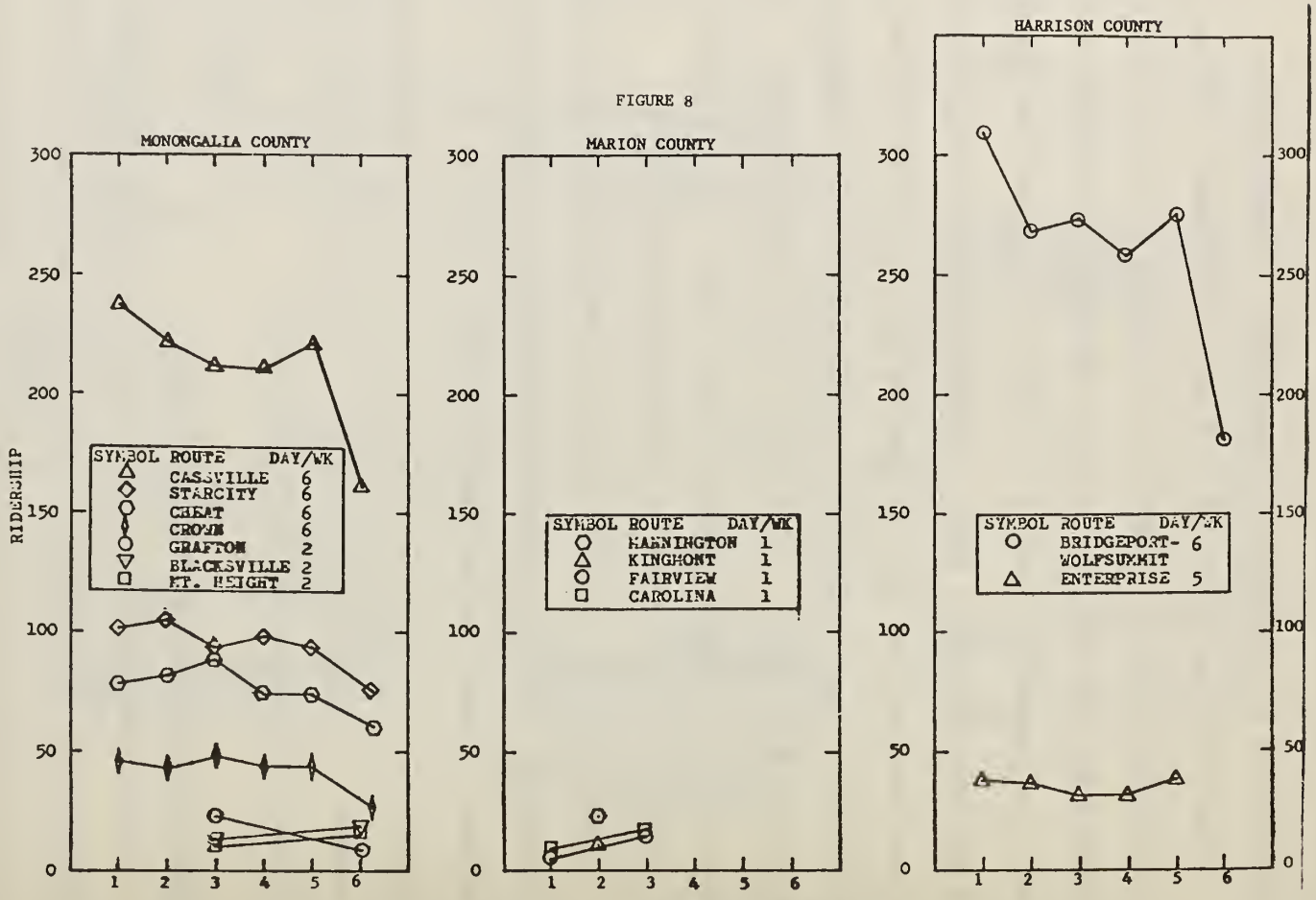
Total average daily ridership for each county for each month is shown in Figure 9. It can be observed that there is a greater average daily ridership by month for Monongalia than for Harrison; and, similarly, for Harrison than for Marion. Tables 3, 4, and 5 list average daily ridership by month. In general, there appears to have been a slight increase in ridership during the period of observation.

Statistical Analysis of Daily Ridership

Statistical analyses of ridership for the routes which run daily in Monongalia and Harrison counties have been performed to determine if there are statistically significant differences in ridership mean and variance (1) within the month, i.e., between two periods, the first seven days and the remainder of the month; and (2) within the year, between the period January-October and the November-December period.

Two different statistical tests are used to test for statistically

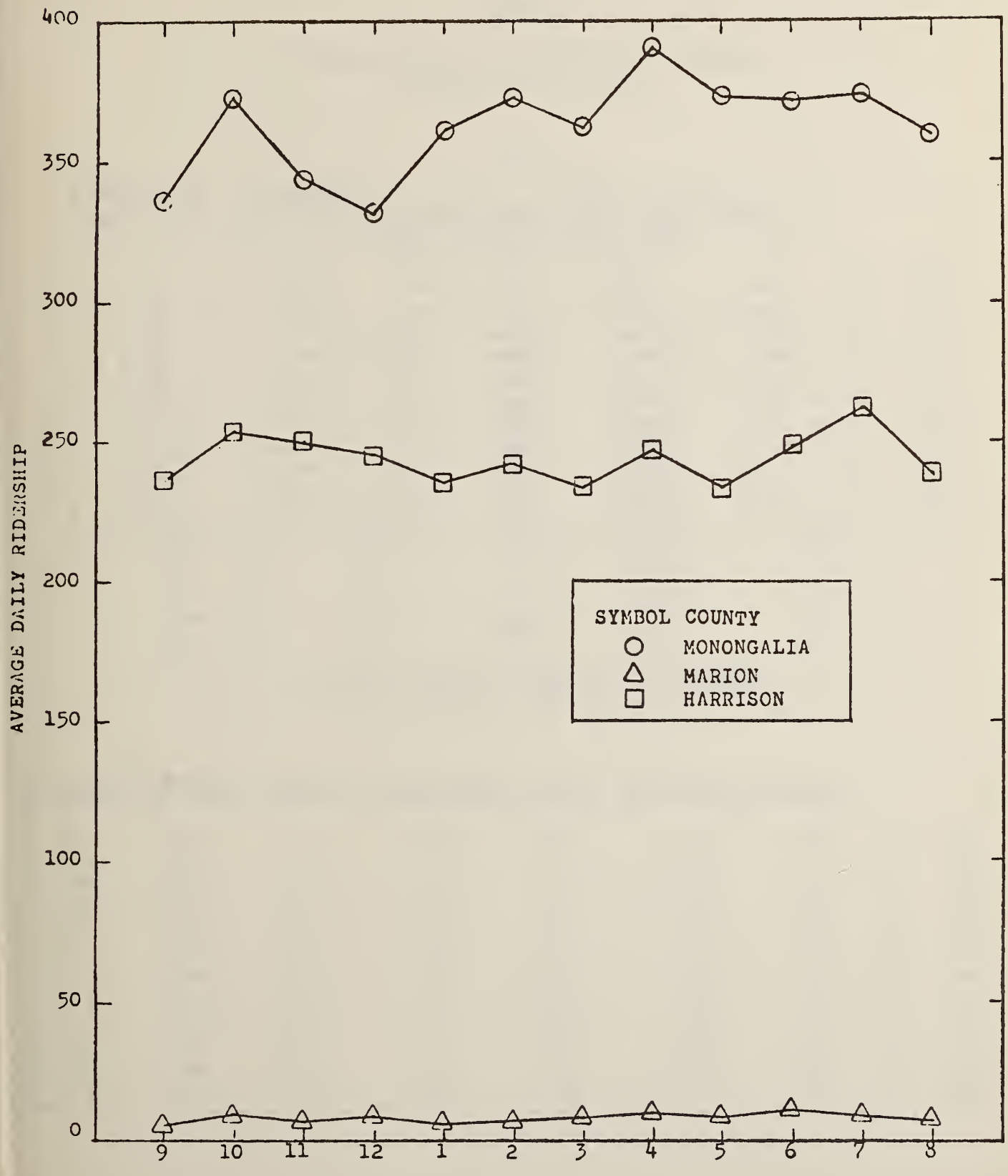
FIGURE 8



AVERAGE DAILY RIDERSHIP BY DAY OF WEEK

WEEKDAY (MONDAY- SATURDAY)

FIGURE 9



AVERAGE DAILY RIDERSHIP
BY MONTH

TABLE 3

AVERAGE DAILY RIDERSHIP BY MONTH PER ROUTE
(For daily operations)

	Cassville	Star City	Cheat	Crown	Bridgeport-Wolf-Summit	Clarksburg-Enterprise
Sept. '74	211.7	84.3	72.8	40.5	267.9	31.9
Oct. '74	216.4	90.9	77.0	36.9	263.3	32.6
Nov. '74	199.2	87.6	75.8	41.5	276.8	27.2
Dec. '74	202.8	87.7	70.5	41.5	275.1	33.9
Jan. '75	205.6	86.7	83.9	46.0	247.7	38.0
Feb. '75	207.5	89.5	82.2	45.8	251.7	36.8
Mar. '75	208.5	92.7	76.4	43.7	249.4	35.9
Apr. '75	215.2	114.8	73.2	37.7	253.1	37.2
May '75	217.2	103.7	68.8	41.9	249.5	35.1
June '75	224.6	92.4	70.6	43.4	266.6	37.1
July '75	205.9	103.0	74.3	46.4	278.7	39.7
Aug. '75	212.4	101.3	70.9	40.1	253.2	38.6

TABLE 4

AVERAGE DAILY RIDERSHIP BY MONTH PER ROUTE
(For less than daily operations)

	Grafton	Blacksville	Mt. Hts.	Mannington	Kingmont	Fairview	Carolina
Sept. '74	16.5	12.7	9.7	20.7	5.5	11.2	9.7
Oct. '74	17.6	12.6	13.0	22.2	10.4	17.8	13.6
Nov. '74	11.9	11.7	7.9	16.7	13.0	12.0	14.5
Dec. '74	15.6	15.0	9.4	20.2	12.0	9.2	16.8
Jan. '75	12.1	12.0	7.7	15.7	10.5	13.7	15.5
Feb. '75	15.1	12.2	7.9	17.7	10.5	13.5	15.5
Mar. '75	14.9	10.7	10.6	26.2	11.0	14.7	20.2
Apr. '75	15.3	10.0	8.7	26.8	12.4	11.8	17.6
May '75	17.2	16.5	13.9	31.5	12.5	13.5	15.7
June '75	15.4	18.4	20.9	39.0	16.0	15.5	20.5
July '75	19.9	13.4	18.4	20.2	10.2	16.2	17.4
Aug. '75	17.3	9.0	25.8	22.0	11.5	10.5	18.0

TABLE 5

AVERAGE DAILY REDERSHIP BY MONTH FOR MONONGALIA, MARION, AND HARRISON COUNTIES
(ridership/month/route days)

	Monongalia County	Marion County	Harrison County	All Counties
Sept. '74	86.9	11.8	160.6	98.5
Oct. '74	89.4	16.0	157.2	98.9
Nov. '74	84.7	14.1	165.9	98.5
Dec. '74	87.9	14.6	165.0	99.3
Jan. '75	90.2	13.9	151.6	99.4
Feb. '75	89.9	14.3	154.0	99.1
Mar. '75	89.1	18.1	154.0	99.2
Apr. '75	93.7	17.2	154.2	100.8
May '75	91.8	14.7	153.7	101.0
June '75	92.8	22.8	161.8	104.1
July '75	91.2	16.0	169.1	102.7
Aug. '75	91.0	15.5	157.3	101.1

significant differences in the mean and the variance. For the mean, the so-called "t-test" is used. A value of the t statistic is calculated, in which

$$t = \frac{\bar{X}_1 - \bar{X}_2}{S_{\bar{X}_1 - \bar{X}_2}}$$

$\bar{X}_i$ - mean of sample i

$S_{\bar{X}_1 - \bar{X}_2}$ - pooled sample of population standard deviation (26, p. 168)

This value is then compared to tabulated values of the t statistic for given levels of confidence and given numbers of degrees of freedom. If the calculated t is less than the tabulated t, then the hypothesis of equal means is accepted; otherwise, it is rejected. (In the case that the sample variances are not equal, the Smith-Satterhwaite t' statistic may be used to test for significant differences in means (26, p. 174)).

For the variance, the so-called "F-test" is used. Again a value of the statistic is calculated and compared to tabulated values of the F statistic of given levels of confidence and given numbers of degrees of freedom. The F statistic is calculated as

$$F = \frac{S_1^2}{S_2^2}$$

where S_i^2 = sample variance

The hypothesis of equal variance is accepted if the calculated F-statistic is less than the tabulated one for the specific level of confidence and numbers of degrees of freedom.

With regard to the first hypothesis put forth above, namely, that ridership is significantly different at the beginning of the month, this

is based on the observation that the people who ride the rural transit services are strictly captive riders, mostly elderly and poor, who are dependent upon Social Security and welfare, respectively. Checks are issued under these programs once a month at the beginning of the month. Therefore, one could reasonably expect ridership to be greatest at the beginning of the month. Examining Table 6, in which is shown the results of the statistical tests on the daily route, it can be seen that for the t-test, in every case the hypothesis of equal means can be rejected and that the mean ridership is statistically significantly greater at the beginning of the month than at the end of the month.

Regarding the second hypothesis, namely, that ridership is greater in November and December than in the rest of the months of the year, this is based on the observation that there is greater shopping activity in anticipation of the Christmas holidays. Again examining Table 6 it can be seen that in three of the six cases the hypothesis of equal mean ridership can be accepted and in three it can be rejected. Of the three cases in which means are different, in one case, the mean of November and December is lower than for the rest of the months. The Star City route, one of the remaining cases, serves a well established discount department store at the edge of town, so that a greater ridership in the peak shopping season is reasonable.

Selected Route Data Analysis

Two of the factors which affect the ridership of a bus route are the length of the route and the number of total dwelling units within walking distance of the route.

Both of these variables relate to overall travel time on the transit route. In general, for transit, travel time is made up of three components, access time, waiting time and riding time. Access time is the time spent going from the rider's home to the point where he boards the bus. Waiting

TABLE 6

STATISTICAL TESTS FOR DAILY ROUTES IN
MONONGALIA AND HARRISON COUNTIES

Route	first 7 days of the month			rest of the month			'F' Test for HO: $T_1^2=T_2^2$; α=5%			't' Test for HO: $\mu_1-\mu_2=0$; α=5%		
	$\bar{X}_1$	S_1	n_1	$\bar{X}_2$	S_2	n_2	$F_{cal.}$	$F_{th.}$	Reject or Accept HO	$t_{cal.}$	$t_{th.}$	Reject or Accept HO
Cassville	234.14	43.27	69	204.34	31.88	237	1.84	1.35	Reject HO	2.03	1.96	Reject HO
Star City	100.71	29.80	69	92.93	19.44	237	2.35	1.35	Reject HO	2.05	1.96	Reject HO
Cheat	79.46	15.81	69	73.32	14.27	237	1.23	1.35	Accept HO	3.49	1.96	Reject HO
Crown	46.01	12.36	69	40.95	11.96	237	1.07	1.35	Accept HO	3.56	1.96	Reject HO
Bridgeport-Wolf Summit	279.29	53.81	69	255.69	48.35	237	1.24	1.35	Accept HO	4.76	1.96	Reject HO
Clarksburg-Enterprise	37.96	8.28	57	34.64	7.96	197	1.08	1.42	Accept HO	2.50	1.96	Reject HO
	Jan. thru Oct.			Nov. and Dec.								
Route	$\bar{X}_1$	S_1	n_1	$\bar{X}_2$	S_2	n_2						
Cassville	212.07	39.12	256	201.02	39.66	50	0.97	1.45	Accept HO	1.99	1.96	Reject HO
Star City	96.06	20.83	256	87.66	13.64	50	2.33	1.45	Reject HO	3.61	1.96	Reject HO
Cheat	75.00	14.97	256	73.18	14.17	50	1.12	1.45	Accept HO	0.87	1.96	Accept HO
Crown	41.88	11.96	256	41.52	12.21	50	0.96	1.45	Accept HO	0.21	1.96	Accept HO
Bridgeport-Wolf Summit	257.68	50.62	256	275.96	50.06	50	1.02	1.45	Accept HO	-2.56	1.96	Accept HO
Clarksburg-Enterprise	36.31	7.77	213	30.63	8.40	41	0.86	1.65	Accept HO	4.62	1.96	Reject HO

Where X_i - Mean daily ridership
S_i - Standard deviation
n_i - Sample size

time is the time spent waiting for the bus, and riding, the time spent on the bus. In urban transit access and waiting time are, in general, valued more highly by riders than riding time. In other words, changes in these times have a much greater effect on ridership than changes in riding time. In rural transit the effect of these various classifications of travel time is not nearly so well studied. Urban transit riders tend to be choice riders, those who have alternative means of transportation, more so than rural transit riders, all of whom are captive riders, almost without exception. Because of this it would be expected that changes in travel time, and travel time components, would have a greater effect on ridership of urban transit than rural transit. In urban transit it is found that a transit route exerts very little influence beyond a 15-minute walking distance from it. Even though riders of rural transit would in general tend to be older than those of urban transit, because transit service is so essential for those who use it, the urban transit experience would seem to be applicable. Therefore, it is thought that the rural transit route would only have an influence on dwelling units within 15 minutes, and that the influence would extend that far. Therefore one would expect ridership to vary with the number of dwelling units within 15 minutes walking distance.

The waiting time component in rural transit is not thought to have any influence on ridership, since time schedules are well known to users and there is much less congestion, therefore much less variation in schedule to cause uncertainties in waiting time. Frequency of service is also of a totally different order of magnitude. Urban transit routes operate several times an hour whereas rural transit may only operate once or twice a week, so that actual waiting time in rural transit is not a function of

frequency.

The riding time component in rural transit may have some effect on ridership, since the lengths of trips tend to be quite long in rural transit which may discourage people from riding. However, this may be counterbalanced to some extent by the opportunity offered for socializing among the bus passengers during the trip. For the elderly, the pleasant experience of sitting and talking with acquaintenances may alleviate the boredom of a long trip. These tendencies are discussed for the Monongalia, Marion and Harrison county routes. The routes are grouped according to frequency of service. The discussion makes use of the graphs in Figures 10 and 11.

For those routes which operate at least every weekday there appears to be a definite tendency for average daily ridership to increase as the number of dwelling units with a 15-minute walking distance ($T.D.U._{15}$) increases. There appears, too, to be a trend for the average daily ridership to decrease as the length of the route increases. For the routes which are operated weekly a stable trend is difficult to find. Ridership appears not to vary for either route length or $T.D.U._{15}$. Figure 12 shows the plot of $T.D.U._{15}$ per route mile vs. average daily ridership per route mile.

Riders per Dwelling Unit per Route per Day

Table 7 indicates the number of riders per dwelling unit per route per day. The routes operated one or two days per week generate between .012 and .031 trips per household per route per day. The routes operated on a daily basis generate trips at a higher rate, between .024 and .674 trips per household.

Figure 10
AVERAGE DAILY RIDERSHIP VS. ROUTE LENGTH

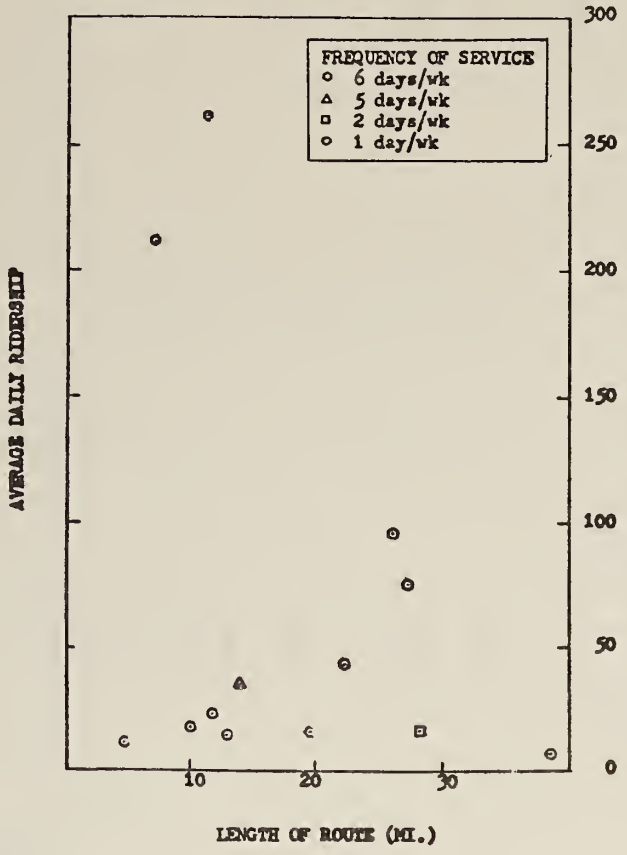


Figure 11
AVERAGE DAILY RIDERSHIP VS. T.D.U.

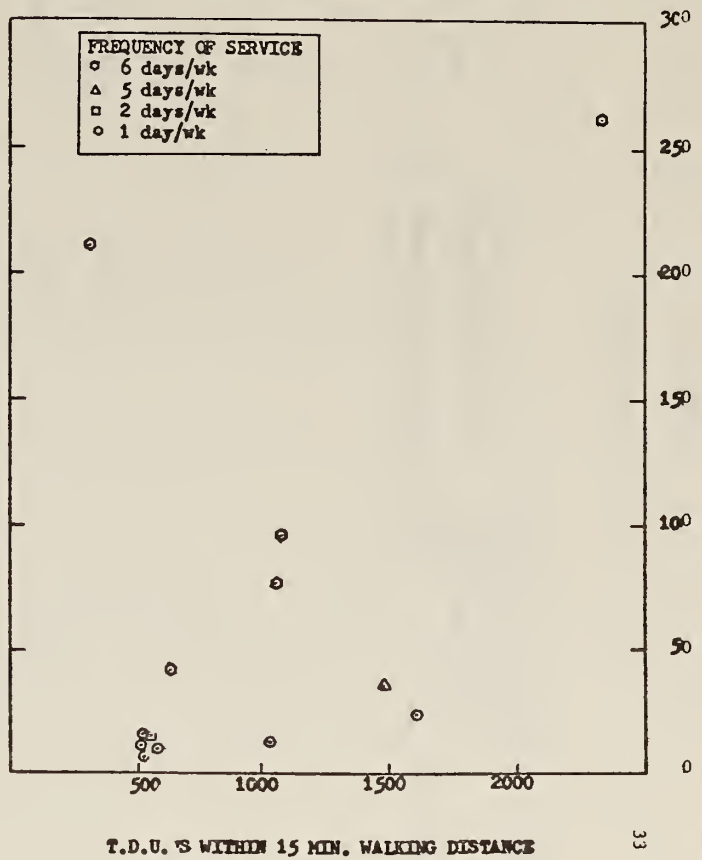


FIGURE NO. 12

T.D.U.$_{15}$/ Route Mile Versus Ridership/Route Mile

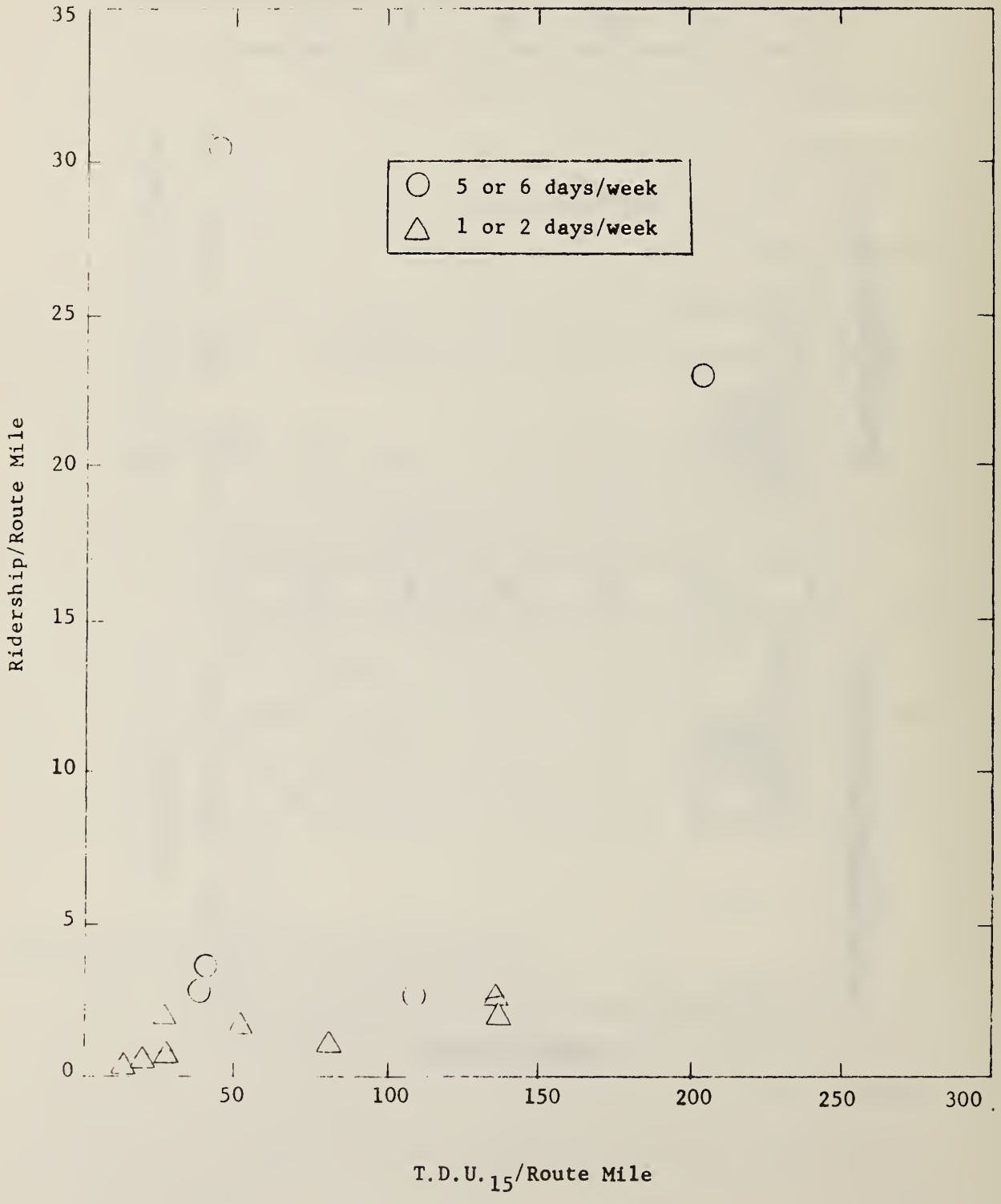


TABLE 7

RIDERS PER $T.D.U._{15}$

Route (5-6 Days/Week)	TDU_{15}/Route Mile	Ave. Daily Ridership/Dwelling Unit/Route Mile	Ave. Daily Ridership/Dwelling $Unit_{15}$
Cassville	45.2	30.5	.674
Cheat	39.1	2.8	.071
Star City	40.8	3.6	.088
Crown	27.0	1.9	.070
Bridgeport-Wolf Summit	205.6	23.1	.112
Clarksburg-Enterprise	109.0	2.62	.024
(1-2 Days/Week)			
Grafton	19.5	.56	.029
Mountain Heights	27.5	.68	.025
Blacksville	13.6	.17	.012
Fairview	81.2	1.06	.013
Mannington	137.0	1.98	.014
Kingmont	136.0	2.57	.019
Carolina	52.7	1.65	.031

Comparison with Other Programs

Sources dealing with rural transportation were surveyed in order to observe the relationship between route ridership and route characteristics. The purpose for this was to obtain a basis of comparison between the routes discussed herein and routes established elsewhere in the country.

One table was found which showed the relationship between daily ridership, county population, and the number of transit vehicles used (13). These values, shown in Table 8, were compared with the values calculated for the Monongalia, Marion, and Harrison county routes shown in Table 9. The values calculated for these three counties fall at about the midpoint range of the values in Table 8 for passengers/day/vehicle and daily ridership/vehicle/population. From these figures it would appear that the Northern West Virginia rural transit operations are, in some sense, typical of rural transit operations elsewhere, at least in terms of the proportion of the county population riding the vehicles and the attractiveness per vehicle. Thus it is hoped that the experience gained in this project can be generalized nationally and therefore the models eventually built applied nationally.

TABLE 8[1]

RURAL TRANSIT PROGRAMS WITH DAILY SERVICE AND GENERAL CLIENTELE: SELECTED CHARACTERISTICS

System Name	Population of Counties Served (000)	Monthly Ridership (Estimated)	Number of Vehicles	Passengers/ Weekday/ Vehicle	Daily Ridership/ Vehicle/ Population
Southeast Arkansas CAA Warren, Arkansas	92,000	600	25	1.1	.00001
Mid-Delta Community Service Transportation Helena, Arkansas	6,300	600	5	5.5	.0009
N.E. Kentucky Area Development Council, Olive Hill, Kentucky (service soon to be reduced to 4 counties)	94,000	350	13	1.2	.00001
Rural Community Bus Lines Annapolis, Maryland	291,000	1,400	3	21.2	.00007
Nash-Edgecombe Economic Development, Inc. Rocky Mount, North Carolina	195,000	3,000	3	45.5	.0002
Project STRIDE Warren, Pennsylvania (no longer operating)	89,700	4,050	12	15.3	.0002
Venange Action Corporation Rural Outreach Franklin, Pennsylvania	62,300	2,000	3	30.3	.0005
Cooperative Transportation Kingsport, Tennessee	243,000	3,000	6	22.7	.00009
Tri-Parish Progress Transportation System Crowley, Louisiana	175,544	1,000	5	9.1	.00005
Raleigh County Community Action Bus System	70,000	3,600	6	27.2	.0004

[1]Alice E. Kidder, "The Economics of Rural Transportation Programs," paper presented at the 54th Annual Transportation Board Meeting, Washington, D.C., January 1975.

TABLE 9

SELECTED ROUTE-RIDERSHIP DATA

County Served	Population of Counties Served	Average Monthly Ridership*	Number of Vehicles	Passengers/ Day/ Vehicle	Daily Rider-ship/Vehicle/ Population
Monongalia	63,449	2,690	6	22.4	.00035
Marion	61,356	67	2	7.4	.00012
Harrison	73,031	1,786	3	25.2	.00035

*Depicts average monthly ridership rates for rural county routes only from September 1974 through August 1975.

Chapter III

ON-OFF COUNTS

Purpose

As a basis for the modeling process, on-off count data are needed since they represent the dependent variable.

Data Collected

The data collected were on-off counts of passengers on Monongalia, Marion and Harrison County rural transit routes. The on-off counts are a record of the number of passengers boarding and leaving the buses at different locations on given days. The data were collected on all the bus routes which covered the rural area in the above three counties, as noted in Chapter II. In order to determine how many days of on-off counts were to be recorded on each bus route, the average daily ridership of each bus route in the last year was reviewed. Referring to Table 1, Chapter II, for high ridership bus routes such as Bridgeport-Wolf Summit, two days of on-off counts were recorded. For medium ridership bus routes such as Enterprise, Cheat and Crown, three to four days of on-off counts were recorded. For the rest of the bus routes, i.e., low ridership routes, on-off counts were recorded until the average ridership by observation remained constant. The number of days involved in on-off counts in the low ridership routes ranged from four to seven days. There were more on-off counts recorded on those routes which were operated twice a week. The purpose was to determine if there was a difference in ridership between Wednesday and Saturday for those twice a week routes.

Since transit usage in the urban areas of the region was not our concern, there were no on-off counts recorded on those bus routes which were operated in urban areas except the Star City route in Monongalia County. The morning and evening Star City buses covered more or less the same route as the Cheat route in rural areas so that part of the Star City route was involved in the study. For those routes which were operated twice a week, there were different ridership characteristics between Wednesday and Saturday operations. Therefore the Wednesday and Saturday operations of a route were treated as two individual routes.

Data Collection Procedure

Before collecting data on the buses, forms for each route for on-off counts were produced. Each form had four columns, headed location, on, off, and on board. (A sample form is shown in Figure 13.) The number of passengers getting on and off at each location was recorded. The number of passengers on board at each location would be the difference between the number getting on and the number getting off at that location added to the number on board at the previous location.

Passengers can board buses at any location along any route by "flagging" the bus. They can get off at any location along any route simply by requesting the bus driver to stop. In order to determine the distribution of ridership from the on-off counts, locations of communities and landmarks were selected. Passengers who got on and off near any community or landmark were counted as being at that location. At the end of the survey, the number of passengers on board at each location could be computed.

Allocation from On-Off Counts to Enumeration Districts

From the collected data, the on-off counts were aggregated by

DATE _____

MONDAY I

TIME OUT _____ TIME IN _____

LOCATION	ON	OFF	ON BOARD
CLARKSBURG			
MT. CLAIR			
LOST CREEK			
McWHORTER			
WEST MILFORD			
LOST CREEK			
MT. CLAIR			
CLARKSBURG			

FIGURE 13

SAMPLE FORM FOR ON-OFF COUNTS

enumeration districts for the later modeling effort on transit usage. In the process of determining the distribution of ridership by enumeration districts, if the "location" was wholly contained within an enumeration district, the on and off counts for that location were counted solely towards the appropriate enumeration district. If the location straddled two enumeration district boundaries, 50 percent of the riders was estimated to have come from either district, unless there was a natural barrier along the boundary. Therefore, the approximate ridership of each enumeration district was calculated as the sum of on-off counts for the locations wholly inside that district added to one-half of the on-off counts for those locations situated at district boundaries.

Description of Enumeration District On-Off Tables

The enumeration district (ED) tables describe for each enumeration district the average number of passengers boarding and debarking for each day of operation. There are three columns in each form, headed location (by name and ED), on, and off. (A sample form is shown in Figure 14.) The ED on-off tables include:

1) Tables of average daily ridership of each individual route (shown in Appendix B).
2) Tables of average daily ridership of each county for those daily operated routes.
3) Tables of average weekly ridership of each county for those less than daily operated routes.

Values by ED are shown in Tables 10 through 15. For ED locations, refer to Figures 18, 19, and 20. At the time of this report no analysis of the data had been undertaken. Therefore, no comments are available.

AVERAGE DAILY RIDERSHIP

FAIRMONT-FAIRVIEW

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	7.5	6.0
RIVESVILLE	ED. 1	0.25	0.25
BAXTER	ED. 4	0.75	1.0
BAXTER	ED. 5	0.75	1.0
GRANT TOWN	ED. 2	2.75	2.75
BASNETTVILLE	ED. 6	0.25	1.0
FAIRVIEW	ED. 3	0.75	1.0

Average of 4 days

FIGURE 14

SAMPLE FORM FOR ENUMERATION DISTRICT ON-OFF AVERAGES

AVERAGE DAILY RIDERSHIP FOR DAILY ROUTES

MONONGALIA COUNTY

LOCATION		ON	OFF
STATE LINE	ED 1	3.00	5.00
TYRONE	ED 2	15.25	21.75
CANYON	ED 3	12.50	16.00
MORGANTOWN	ED 6-31	87.00	60.42
BROOKHAVEN	ED 35A	7.87	11.87
RICHARD	ED 35B	0.38	2.75
DELLSLOW	ED 37	1.26	1.63
HARMONY GROVE	ED 46	3.83	6.16
BOOTH-NATIONAL	ED 47	5.16	7.82
CROWN	ED 48	6.00	8.33

TABLE 10

AVERAGE WEEKLY RIDERSHIP FOR LESS THAN DAILY ROUTES

MONONGALIA COUNTY

LOCATION		ON	OFF
MORGANTOWN	ED 6-31	41.0	41.25
MT. HEIGHTS	ED 37	17.72	20.97
KINGWOOD PIKE RIDGEDALE	ED 38	6.8	6.15
HALLECK	ED 39	7.0	4.99
TRIUNE	ED 40	2.42	1.83
BLACKSVILLE	ED 55	4.0	4.5
CORE	ED 56	1.75	1.38
PENTRESS	ED 57	1.0	.62

All routes operate once or twice a week.

TABLE 11

AVERAGE DAILY RIDERSHIP FOR DAILY ROUTES

MARION COUNTY

LOCATION	ON	OFF
THOBURN ED 14	1.0	0.4
WORTHINGTON ED 15	1.0	2.2
MONONGAH ED 56	4.8	4.4
FAIRMONT ED 23-37	14.4	14.2

TABLE 12

AVERAGE WEEKLY RIDERSHIP FOR LESS THAN DAILY ROUTES

MARION COUNTY

LOCATION	ON	OFF
RIVESVILLE ED 1	0.25	0.25
GRANT TOWN ED 2	2.75	2.75
FAIRVIEW ED 3	0.75	1.00
BAXTER ED 4	0.75	1.00
BAXTER ED 5	0.75	1.00
BASNETTVILLE ED 6	0.25	1.00
MANNINGTON ED 7-9	6.00	6.25
FARMINGTON ED 13	3.00	3.25
THOBURN ED 14	0	0.25
WORTHINGTON ED 15	1.25	1.75
CAROLINA ED 19	5.00	4.75
BARRACKVILLE ED 22	0.50	0.25
FAIRMONT ED 23-37	35.25	34.25
MILLERSVILLE KINGMONT ED 50	4.75	4.00
PLEASANT VALLEY ED 51	5.13	5.00
COLFAX ED 52	1.88	1.50

All routes operate once a week.

TABLE 13

AVERAGE DAILY RIDERSHIP FOR DAILY ROUTES

HARRISON COUNTY

LOCATION		ON	OFF
ENTERPRISE	ED 1	2.67	0.67
SHINNSTON	ED 2-4	8.67	8.00
GYPSY	ED 7	1.00	3.67
MEADOWBROOK	ED 11	2.00	1.67
SALEM	ED 14-15	0.50	0.50
WOLF SUMMIT	ED 16	12.00	2.50
BRISTOL	ED 17	0.25	0.25
BRISTOL	ED 18	0.25	0.25
HEPZIBAH	ED 19	5.00	4.00
CLARKSBURG	ED 22-29	72.83	86.17
WILLSONBURG	ED 32	22.00	20.00
O'NEIL	ED 33	7.00	3.00
REYNOLDSVILLE	ED 34	10.50	9.50

TABLE 14

AVERAGE WEEKLY RIDERSHIP FOR LESS THAN DAILY ROUTES

HARRISON COUNTY

LOCATION		ON	OFF
ENTERPRISE	ED 1		2
SHINNSTON	ED 2-4	3	
McALPIN SALTWELL	ED 5		2
PINE BLUFF	ED 7		6
LUMBERPORT	ED 8		1
HAYWOOD	ED 10		2
BROWN SARDIS	ED 12		9
WALLACE	ED 13	1	9
SALEM	ED 14-15		1
MARSHVILLE	ED 16		3
JARVISVILLE	ED 18		1.5
CLARKSBURG	ED 22-29	62	2
BRIDGEPORT	ED 35-37		1
ANMOORE	ED 38		1
QUIET DELL	ED 43		2
JOHNSTOWN	ED 44		3
WEST MILFORD	ED 69		3
BENSON JARVISVILLE	ED 71		8.5
LOST CREEK	ED 72		7
MT. CLAIRE	ED 73	3	4

All routes operate once a week.

TABLE 15

Special Problems

After the data were collected, the on-off counts were aggregated by enumeration district for further computation of transit usage. Since some sections of the bus routes were located along the enumeration district boundaries, the exact on-off location by enumeration district was difficult to determine. The technique adopted was to estimate that half of the passengers came from each side of the route, unless there was a natural barrier along the route, in which case the entire ridership was allocated to the district without the barrier.

The workers who made the on-off counts were not initially familiar with the bus routes. It took several trips for them to become familiar with different locations along the bus routes. Also, when the work of questionnaires and on-off counts was being carried out simultaneously, curious passengers sometimes raised questions about the questionnaires, which hindered the on-off counts. The data are, nevertheless, felt to be reliable, since several days data were taken and averaged, thus minimizing the problem.

Improvements

The procedure can be improved by publicizing the survey a few days in advance through newspapers or local radio stations. Such an arrangement would give better understanding to the public of the purpose of the survey. This would reduce questions from curious passengers, and the work of the surveyors would not be hindered. Also, with a better understanding from the public of the purpose of the survey, passengers would be more cooperative since they would know the purpose is to improve their means of transportation.

Chapter IV

RIDER SURVEY

Purpose

The purpose of the rider survey was to gather data about the socioeconomic characteristics of the riders and trip characteristics, again for later use in modeling. Part of the modeling effort will consist of identifying which socioeconomic characteristics are related to trip purpose and frequency of use. This chapter describes data collected and results of preliminary analyses.

Design

The questionnaire was designed in such a way that it would contain categories compatible to census data for the following variables: origin and destination of transit trip, income, age, household size, education, car ownership, availability of telephone, and whether housing is owned or rented. The questionnaire was printed on card stock and was stamped with prepaid postage. It was pretested under conditions similar to those expected to be experienced in the field survey. Previous transit survey forms were also consulted during the design phase.

The questionnaire is shown in Figure 15. It contains 23 questions which request information about the trip-maker, trip purpose, frequency of use, waiting time, time to final destination after departing the bus, access mode, and mailing address.

An on-board questionnaire distribution was accomplished by survey employees except in Harrison County where questionnaires had to be

INSTRUCTIONS This is a questionnaire concerning you and your bus riding habits. It is a part of a research program aimed at studying the use of rural transit. Your cooperation will make this an easier task. Please answer all questions by checking the correct box or filling in the blank. As you get off the bus please return the questionnaire to the person who gave it to you. If you forget, then the questionnaire can be returned postpaid. If you don't have time to finish, please take it with you and complete it. Then place it in a mailbox. Please don't sign your name. All information will be kept confidential. Thank you!

Nu. [ ] [ ] [ ] [ ] (1 2 3 4)
Route [ ] [ ] (5 6)
Date [ ] [ ] [ ] [ ] (7 8 9 10 11 12)
Daywk [ ] (13)
Time [ ] [ ] [ ] [ ] (14 15 16 17)

1. What street or rural route do you live on? _____ [ ] [ ] [ ] [ ] [ ] [ ] (18 19 20 21 22 23)

2. What is the zip code of your home mailing address? _____ [ ] [ ] [ ] [ ] [ ] (24 25 26 27 28)

3. Where did you board this bus? _____ [ ] [ ] [ ] [ ] (29 30 31 32)

4. Did you come from home just before boarding the bus? [ ] Yes [ ] No [ ] (33)

5. If you walked to the bus stop, how long was your walk?
[ ] 0-5 Min. [ ] 5-10 Min. [ ] 10-15 Min. [ ] More than 15 Min. [ ] Didn't walk, came by other means [ ] (34)

6. How long did you wait for the bus after arriving at the stop?
[ ] 0-5 Min. [ ] 5-10 Min. [ ] 10-15 Min. [ ] More than 15 Min. [ ] (35)

7. Did you know when the bus was supposed to come? [ ] Yes [ ] No [ ] (36)

8. Where will you get off this bus? _____ [ ] [ ] [ ] [ ] (37 38 39 40)

9. How will you get to your destination after leaving the bus?
[ ] Walk [ ] Auto [ ] Transfer to another bus [ ] Other [ ] (41)

10. If you will walk, how long will it take you to reach this destination?
[ ] 0-5 Min [ ] 5-10 Min. [ ] 10-15 Min. [ ] More than 15 Min. [ ] Won't walk, will take other means [ ] (42)

11. What reasons did you have for making this trip today? Check as many as apply.
[ ] Work [ ] School [ ] Shopping [ ] Medical or dental care
[ ] Visiting friends or relatives [ ] Banking [ ] Other
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] (43 44 45 46 47 48 49)

12. Now, what was the single major reason for making this trip today? (Please check only one box.)
[ ] Work [ ] School [ ] Shopping [ ] Medical or dental care
[ ] Visiting friends or relatives [ ] Banking [ ] Other
[ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] [ ] (50 51 52 53 54 55 56)

13. How often do you ride the bus?
[ ] Daily [ ] 2-4 times a week [ ] Once a week [ ] 2-3 times a month [ ] Once a month [ ] Less frequently [ ] (57)

14. Do you currently hold a driver's license? [ ] Yes [ ] No [ ] (58)

15. Besides you, how many other persons live (regularly eat and sleep) at your household?
[ ] I live alone [ ] 1 other person [ ] 2 [ ] 3 [ ] 4 [ ] 5 or more [ ] (59)

16. How many of these other people currently have a driver's license?
[ ] None [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 or more [ ] (60)

17. How many automobiles, in total, are registered to the people regularly living in your household?
[ ] None [ ] 1 [ ] 2 [ ] 3 [ ] 4 [ ] 5 or more [ ] (61)

18. Do you have a telephone in your household? [ ] Yes [ ] No [ ] (62)

19. Are your living quarters
[ ] Owned by you or someone else in your household? [ ] Rented for cash rent? [ ] Other? [ ] (63)

20. To what age group do you belong? [ ] 5-14 [ ] 15-24 [ ] 25-34 [ ] 35-44 [ ] 45-54 [ ] 55-64 [ ] 65 and over [ ] (64)

21. How many years of school have you completed?
[ ] No schooling
Elementary: [ ] 1-4 years [ ] 5-6 years [ ] 7-8 years
High School: [ ] 1-3 years [ ] 4 years
College: [ ] 1-3 years [ ] 4 years [ ] 5 or more years
[ ] [ ] (65 66)

22. Are you [ ] Male? [ ] Female? [ ] (67)

23. Would you please check the box that best indicates the total 1974 income for your household? (All information will be kept confidential.) [ ] $0-2999 [ ] $3000-5999 [ ] $6000-8999 [ ] $9000-11,999 [ ] $12,000-14,999 [ ] $15,000 or more [ ] (68)

Any comments on your bus service? _____

FIGURE 15

RIDER SURVEY QUESTIONNAIRE

distributed by transit vehicle operators. The objective was to survey riders who had one end of their trip lying outside the city limits of Morgantown, Fairmont, or Clarksburg. It was desired to avoid surveying riders whose trips were within the city limits. To accomplish this, inbound runs were surveyed where possible, to more easily identify patrons who boarded in rural areas. Outbound runs were surveyed only when inbound runs could not be surveyed due to lack of survey personnel or the run originating in a remote rural area. On these runs it was not possible to identify whether an individual's trip end would be outside the city until the questionnaire was returned. The survey employees handed out questionnaires and pencils as patrons boarded, told them the purpose of the survey, and were available to answer questions about the form. Riders were told to return the questionnaire by mail if they could not complete it on the bus.

After collection, the data were coded and keypunched. Tables 16-19 show the percentage of the questionnaires returned on each route. Out of a total of 252 questionnaires distributed by survey personnel, 173, or 69 percent, were returned. Of these, 161 met the criterion of having at least one trip end outside city limits and were used for analysis. An additional 105 questionnaires were returned from those distributed by vehicle operators for the Central West Virginia Community Action Association in Harrison County. Of these, 33 failed to meet the criterion of having at least one trip end outside Clarksburg and were set aside, leaving 72 usable questionnaires. The annual average number of passenger round trips to and from rural areas per week on the Community Action routes were estimated to be 66, which suggests that the questionnaire sample of 72 patrons represented a good response. In all, a total of 233 questionnaires

MONONGALIA COUNTY

	Route					
	Star City	Cheat	Crown	Grafton	Blacksville	Mt. Heights
1. Total Daily One Way Riders on Days of Survey	96	86	41	12	16	7
2. Number of Questionnaires Distributed	42	43	34	7	15	5
3. Number of Questionnaires Returned on Bus	20	35	7	2	3	2
4. Number of Questionnaires Returned by Mail	6	0	14	4	5	1
5. Total Number of Questionnaires Returned	26	35	21	6	8	3
6. % Returned (5 ÷ 2 x 100%)	62%	81%	61%	85%	53%	60%
7. Total Number Used in Analysis	20	34	17	6	8	2

TABLE 16

SURVEY RETURNS, MONONGALIA COUNTY

MARION COUNTY

	Route					
	Mannington	Kingmont	Fairview	Worthington	Colfax	Carolina
1. Total Daily One Way Riders on Days of Survey	12	17	14	42	23	34
2. Number of Questionnaires Distributed	5	6	10	8	7	11
3. Number of Questionnaires Returned on Bus	0	3	3	1	2	3
4. Number of Questionnaires Returned by Mail	1	2	4	5	4	3
5. Total Number of Questionnaires Returned	1	5	7	6	6	6
6. % Returned (5 ÷ 2 x 100%)	20%	83%	70%	75%	85%	54%
7. Total Number Used in Analysis	1	5	7	6	6	5

TABLE 17

SURVEY RETURNS, MARION COUNTY

HARRISON COUNTY

	Route	
	Wolf Summit	Enterprise
1. Total Daily One Way Riders on Days of Survey	109	39
2. Number of Questionnaires Distributed	39	20
3. Number of Questionnaires Returned on Bus	17	5
4. Number of Questionnaires Returned by Mail	16	6
5. Total Number of Questionnaires Returned	33	11
6. % Returned (5 ÷ 2 x 100%)	68%	55%
7. Total Number Used in Analysis	29	11

TABLE 18

SURVEY RETURNS, HARRISON COUNTY - (CENTRAL WEST VIRGINIA TRANSIT ASSOCIATION)

HARRISON COUNTY

CENTRAL WEST VIRGINIA COMMUNITY ACTION ASSOCIATION

		Annual Average Passenger Round Trips per Week	No. of Usable Questionnaires Returned
Monday	McWhorter	8.6	5
Monday	Kincheloe	4.5	13
Tuesday	Wallace	7.9	7
Tuesday	Route 73	5.0	2
Wednesday	Johnstown	7.5	12
Wednesday	Route 23	6.0	5
Thursday	Sardis	7.4	13
Thursday	Laurel Valley	3.2	3
Friday	Wyatt	7.2	5
Friday	Wallace	8.3	7
	TOTAL	65.6	72

TABLE 19

SURVEY RETURNS, HARRISON COUNTY,

CENTRAL WEST VIRGINIA COMMUNITY ACTION ASSOCIATION

were utilized for analysis. Of this number, 81 percent had been obtained from inbound trips, and 84 percent of the respondents had been surveyed just after leaving home.

Preliminary Tabulations

The analysis of the rider survey is in a preliminary stage. Results are summarized in the following paragraphs. Appendix A contains frequency counts of responses to each of the questions concerning riding habits and socioeconomic characteristics. Table 20 and Figures 16 and 17 show cross-tabulations among socioeconomic characteristics and usage.

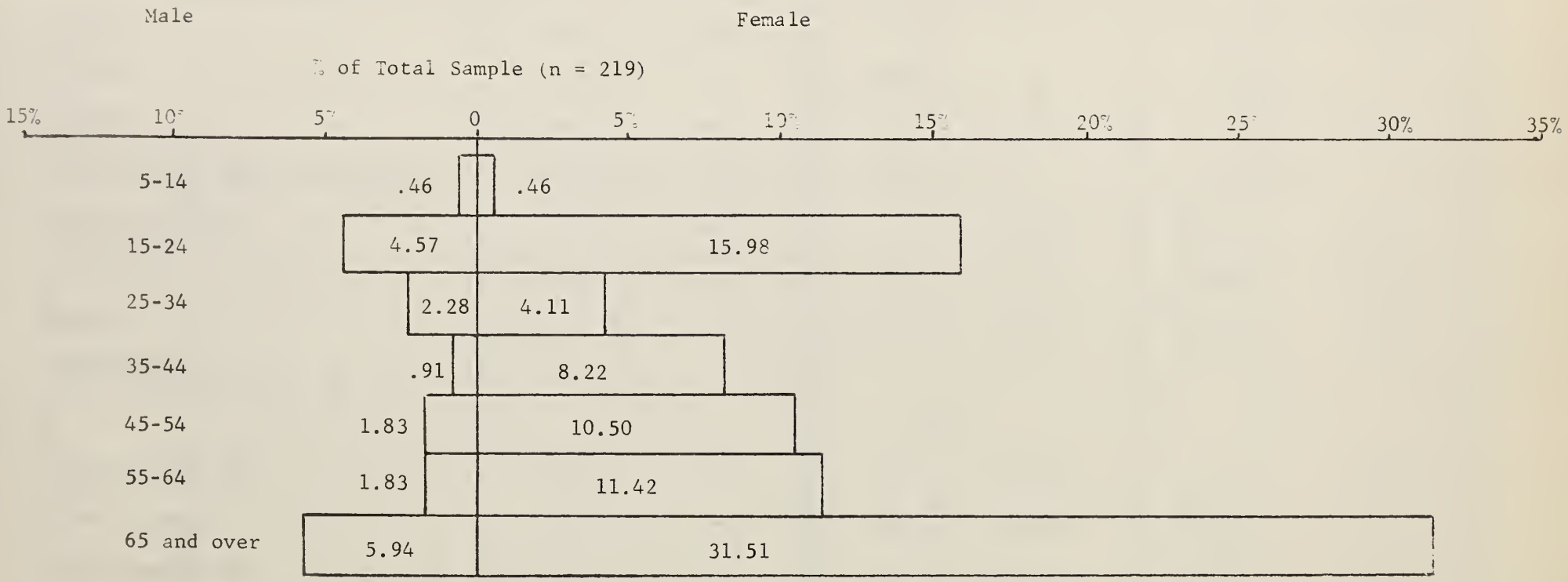
Sixty-one percent of the riders had origins within five minutes walking distance of the bus stop. Only 14 percent walked for more than ten minutes to reach the stop. Ninety-five percent knew when the bus was supposed to come, which implies the riders were familiar with the schedules, and only about 24 percent of the sample had to wait more than ten minutes for the bus, which suggests that schedules were kept by the bus drivers. The total walk and wait time for the rural transit routes under study appears similar to what would be expected in urbanized areas. Ninety percent of the sample walked to their final destination after leaving the bus, but the length of their walk from the bus stop to their destination tended to be slightly longer than their walk to the bus stop. Seventeen percent walked more than ten minutes to reach their final destination.

Users aged 65 and over comprise 38 percent of the sample, and women comprise 82 percent of the sample. Figure 16 shows the age-sex distribution of the sample. A preliminary examination of frequency of use among the riders indicates that among the age group below 55 frequency of use is greater than among the age group 55 and above (Figure 17). The most

Frequency of Using Rural Transit	No Autos Registered in Household (42.8%)		One or More Autos Registered in Household (57.2%)			
			Licensed Driver (27.8%)		No License (29.4%)	
	Under 55 (15.0%)	55 and older (27.8%)	Under 55 (23.0%)	55 and older (4.8%)	Under 55 (18.7%)	55 and older (10.7%)
Daily	28.6%	5.8%	41.9%	22.2%	37.1%	5.0%
2-4 times/week	28.6%	9.6%	34.9%	11.1%	22.9%	15.0%
Once a week	14.3%	48.1%	9.3%	11.1%	14.3%	35.0%
2-3 times/month	17.9%	25.0%	9.3%	33.3%	14.3%	30.0%
Once a month	3.6%	9.6%	2.3%	11.1%	5.7%	5.0%
Less frequently	7.1%	1.9%	2.3%	11.1%	5.7%	10.0%
Trip Purpose						
Work	17.9%	9.6%	64.5%	11.1%	37.1%	20.0%
Shopping	32.1%	50.0%	11.6%	44.4%	22.9%	50.0%
Medical/dental	17.9%	19.2%	--	33.3%	11.4%	20.0%
Visiting rriends and relatives	7.1%	1.9%	4.6%	--	2.9%	--
Banking	10.7%	30.8%	2.3%	33.3%	1.1%	10.0%
School	--	--	32.6%	--	11.4%	--
Other	17.9%	19.2%	7.0%	--	5.7%	5.0%

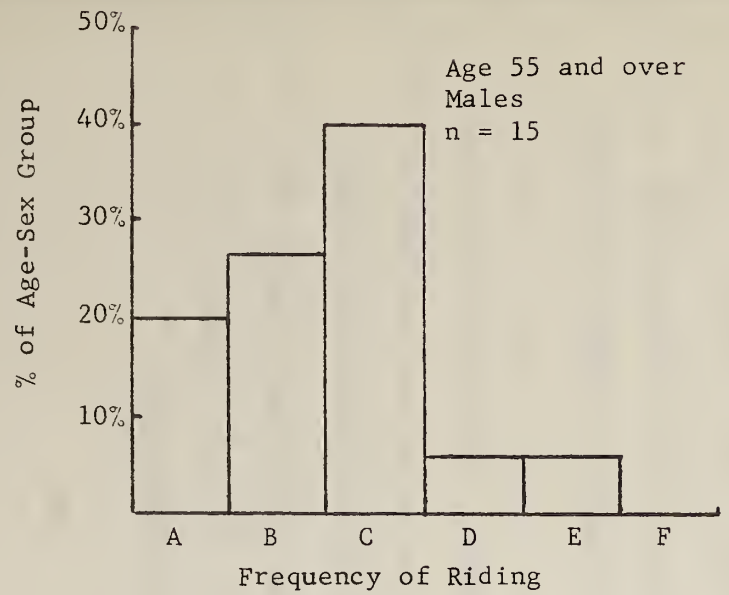
Trip-Making Characteristics of Survey Sample (Sample Size = 187)
Percent of total sample shown in parentheses

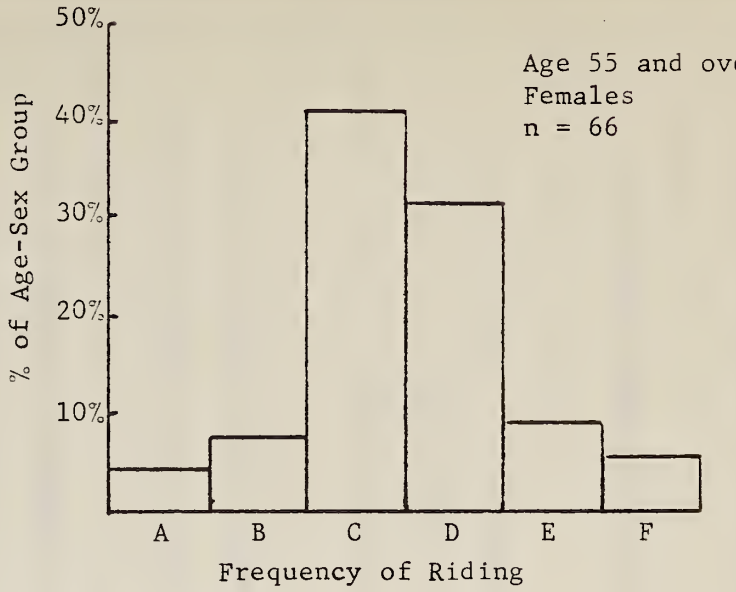
TABLE 20

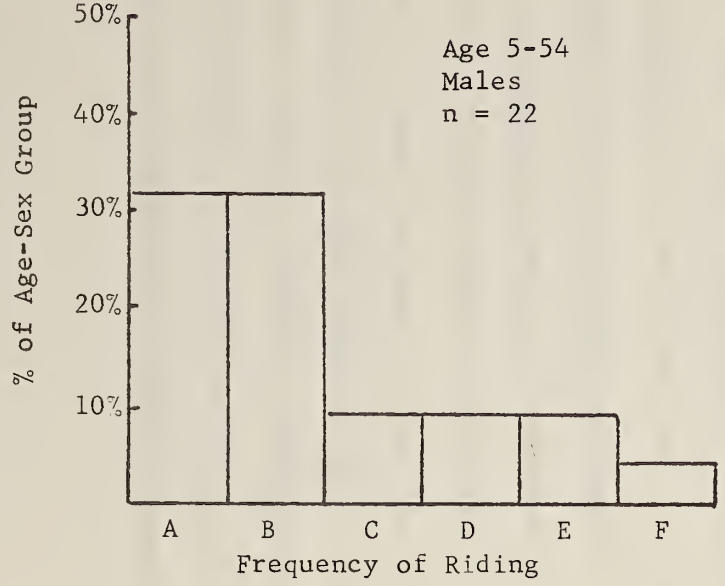


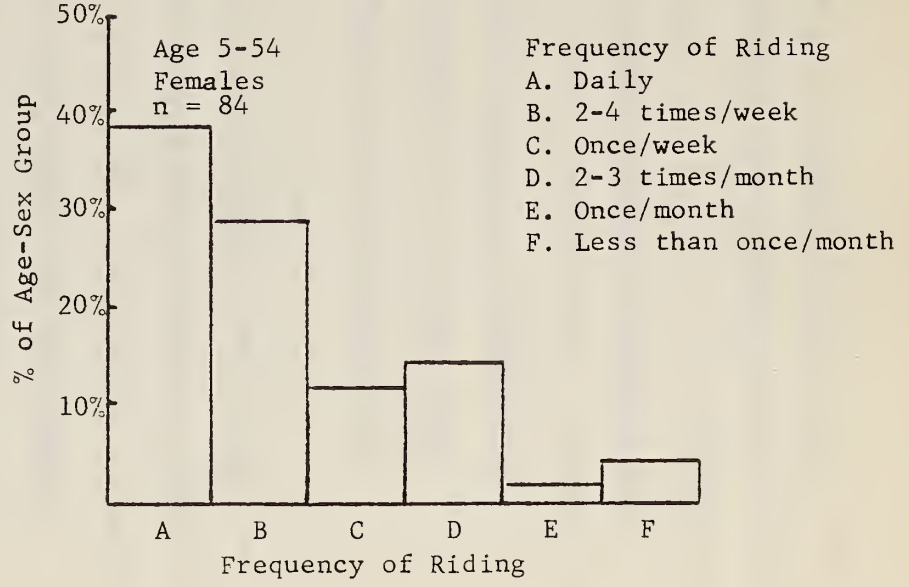
Age-Sex Distribution of Rural Public Transportation Users Aged 5 and Over in Harrison, Marion and Monongalia Counties (Based on 1976 Rider Survey)

FIGURE 16









Frequency of Ridership Among Age-Sex Groups Using Rural Public Transportation in Harrison, Marion and Monongalia Counties (Based on 1976 Ridership Survey)

Figure 17

common trip purpose was shopping, indicated by 28.9 percent of the sample, followed by work, 23.8 percent; banking, 14.8 percent; and medical trips, 12.1 percent.

The majority of the sample appear to be captive riders for one or more reasons as shown by the following:

68 percent do not have a driver's license;

43 percent live in a household with no automobile;

39 percent have a yearly income less than $3,000.

In addition, 36 percent have eight years of education or less (but only 6 percent have less than a sixth-grade education), and 17 percent have no telephone in their home. The elderly form a large portion of the riders.

The sample has been sorted into distinct homogeneous groups on the basis of age, auto availability, and whether or not the person has a driver's license (Table 20). The largest group is perhaps the most captive. Comprising 27.8 percent of the sample, it consists of riders aged 55 and over who live in households with no automobiles. Of these riders, 81 percent of which are female, only 15.4 percent use bus service on a daily or near daily basis (see Table 20), and the dominant trip purpose is shopping as indicated by 50.0 percent of the group. Eighty-five percent ride once a week or less frequently.

However, the second largest group, comprising 23.0 percent of the sample, may have the greatest number of transportation choices available to them. They are under age 55, live in households with one or more automobiles and have a driver's license. This group is 84 percent female, 76.8 percent ride on a daily or nearly daily basis, and their dominant trip purpose is work, as indicated by 64.5 percent of the group.

The third largest group, 18.7 percent of the sample, is under age 55, living in households with one or more autos, but does not possess a driver's license. This group is 80 percent female, 60.0 percent ride the bus daily or near daily, and the dominant trip purpose is work, as indicated by 37.1 percent of the group.

The fourth largest group, comprising 15.0 percent of the sample, consists of people under age 55 living in households without autos. Approximately 71 percent female, the percent of daily or near daily users is 57.2, and 32.1 percent indicate shopping as the dominant trip purpose.

The fifth largest group, comprising only 10.7 percent of the sample, are individuals aged 55 and over who live in households having one or more automobiles but are not licensed drivers. Ninety-five percent female, 20 percent use the bus on a daily or nearly daily basis, and 50.0 percent state shopping as the dominant trip purpose.

The sixth and smallest group, a mere 4.8 percent of the sample, contains individuals aged 55 and over who live in households having one or more autos and are licensed drivers. Seventy-eight percent are female, 33.3 percent ride on a daily or near daily basis, and shopping is the dominant trip purpose of 44.4 percent of the group.

Second-year effort will involve an examination of the survey data by route to determine how ridership varies with frequency of service.

Special Problems

Several problems tended to inhibit full responses from some riders. Many of the riders were old and a few were illiterate or mentally retarded, so they were not able to fill out the questionnaire. Some chose not to answer the questions about personal matters. For example, approximately

27 percent of the riders responding to the questionnaire did not answer the question about family income. Some riders were discouraged after glancing over the length of the questionnaire. Moreover, it was difficult for some to complete the questionnaire in the bus, when the bus was moving. That is why riders were told that they could finish the questionnaire later and drop it in a mailbox. Though no postage was required, many people took the questionnaire home and failed to return it. Resurveying the routes in an effort to obtain a larger sample was not effective. Nearly all of the riders had already received a form and did not wish to take a second form, whether they had returned the first form or not.

After initial analysis of the data, the following changes are suggested for future surveys.

1. Shorten the questionnaire. This would make it less formidable to the transit user and more quickly completed. Several of the questions designed to tie into the census data may prove to be unimportant for estimating demand. In particular, availability of telephone and whether a person owns or rents their housing appear to show little correlation to transit use among the sample taken in the three-county area. These questions could be omitted. The questions on age, education, family income, number of members in the household, and number of autos could be asked with fewer response categories presented. The preliminary analysis suggests obvious breakpoints may exist on these criteria which can reduce the number of necessary categories to two or three. The questions on driver's licenses, for which no comparable census data exist, may be of doubtful value in models which must rely on existing sources of data, such as the census. By presenting users with a shorter questionnaire, a higher response rate might be obtained.

2. Use larger print. Many of the riders are elderly and have difficulty seeing. In addition, the ride characteristics of buses on rural roads make it hard to read small print. Larger print would facilitate faster completion of the questionnaire and, again, make it less formidable.

3. Extend the survey period. If sampling were conducted over a longer period of time, a greater representation of infrequent riders could be obtained.

Only one person was assigned on each bus to both distribute questionnaires and take on-off counts. Occasionally, he or she was not able to hand out the questionnaire to each rider. For better data collection at least two persons should be employed on high volume routes. Where the driver was well known to riders and handed out questionnaires (Harrison County), a much better response was obtained than when the questionnaire was distributed by survey workers. This method of distributing questionnaires would have merit so long as it did not interfere with operation of the vehicle.

Chapter V

CENSUS DATA

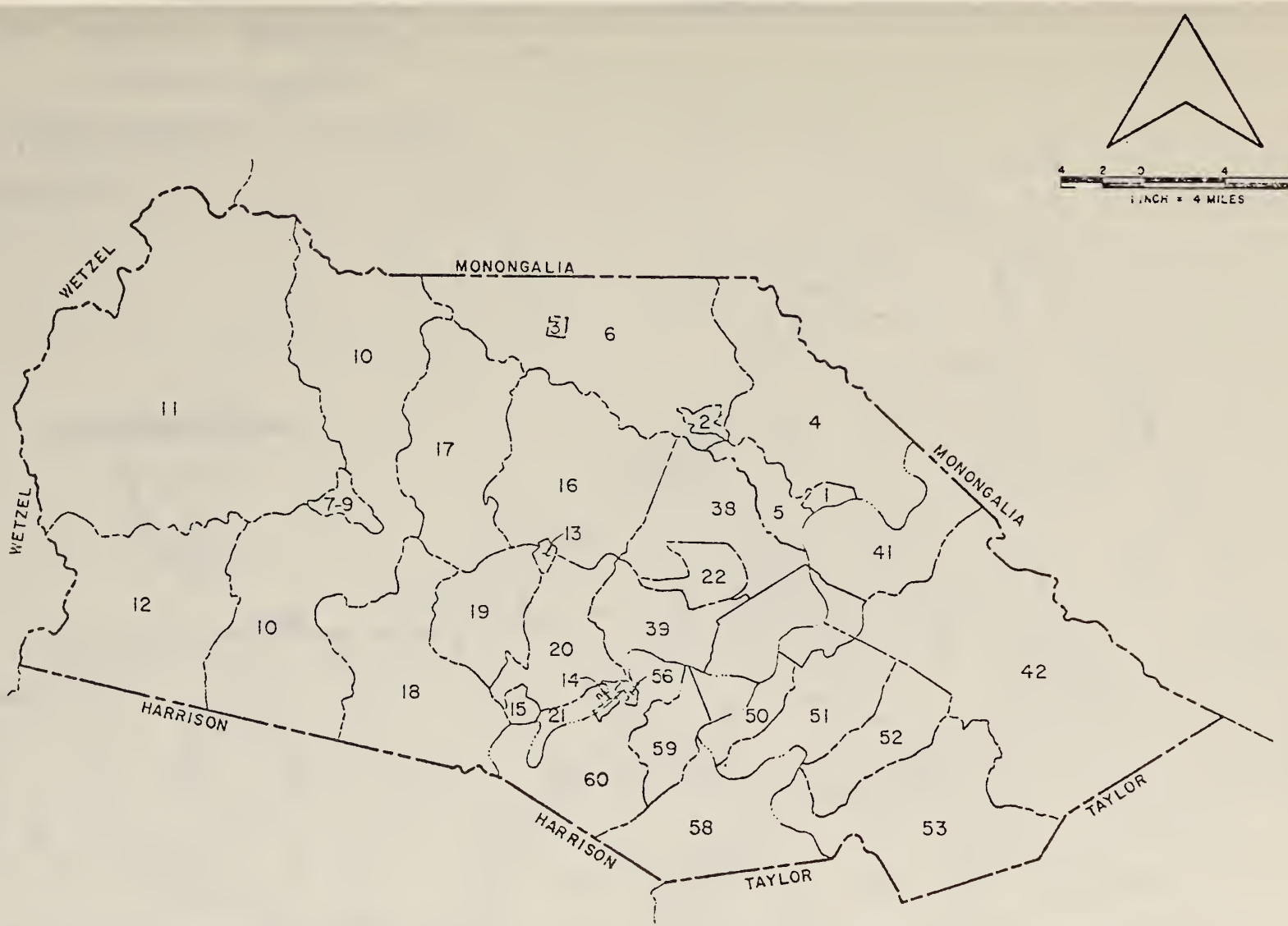
Purpose

Transit usage is dependent on the socioeconomic characteristics of the transit users themselves. Census data can provide a vast amount of socioeconomic data for the major independent variables in the modeling process. The purpose of this chapter is to describe the data which were developed for use in model building.

Background

The Bureau of the Census has published data from the 1970 Census on five sets of computer tapes. Each set is referred to as a "count" and the different counts represent different types of information, different geographic areas, and different sizes of areal units. Each of the 50 states has a specific set of tapes for the six counts.

The first count tapes were the first to be prepared by the Bureau of the Census and report on the questions asked by the census of 100 percent of the population. The areal unit for which the first count data are published is the enumeration district or "ED" in conventional enumeration areas, and the block group in certain urban areas of population greater than 50,000. In rural areas, the enumeration district is the smallest areal unit for which census data are available. Figures 18-20 show the enumeration district boundaries for Harrison, Marion, and Monongalia counties. The items available include age, sex, color, marital status, relationship to head of household, tenure of occupied housing units,



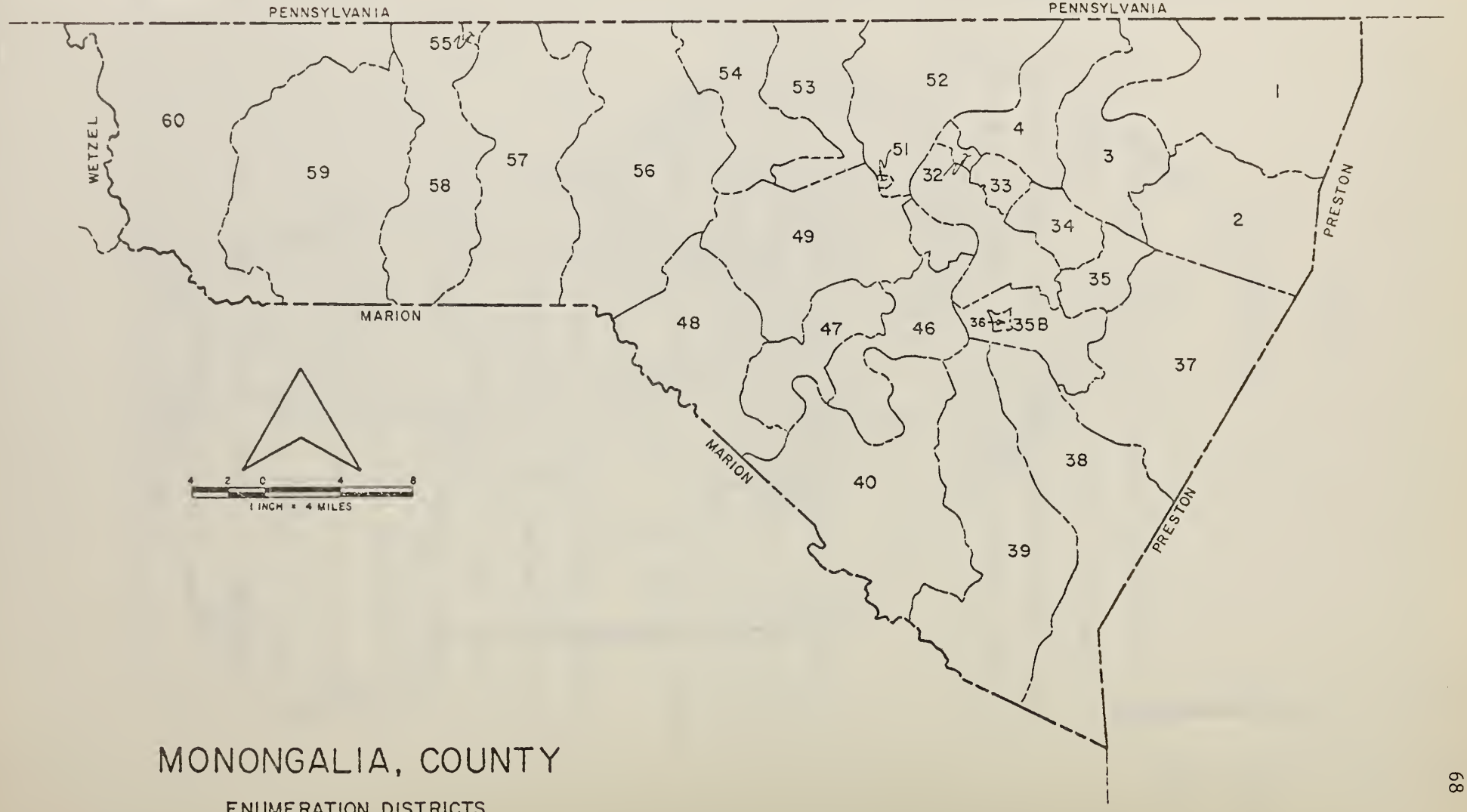
MARION COUNTY

ENUMERATION DISTRICTS

DRAWN BY: REGION VI

PLANNING & DEVELOPMENT COUNCIL

FIGURE 18



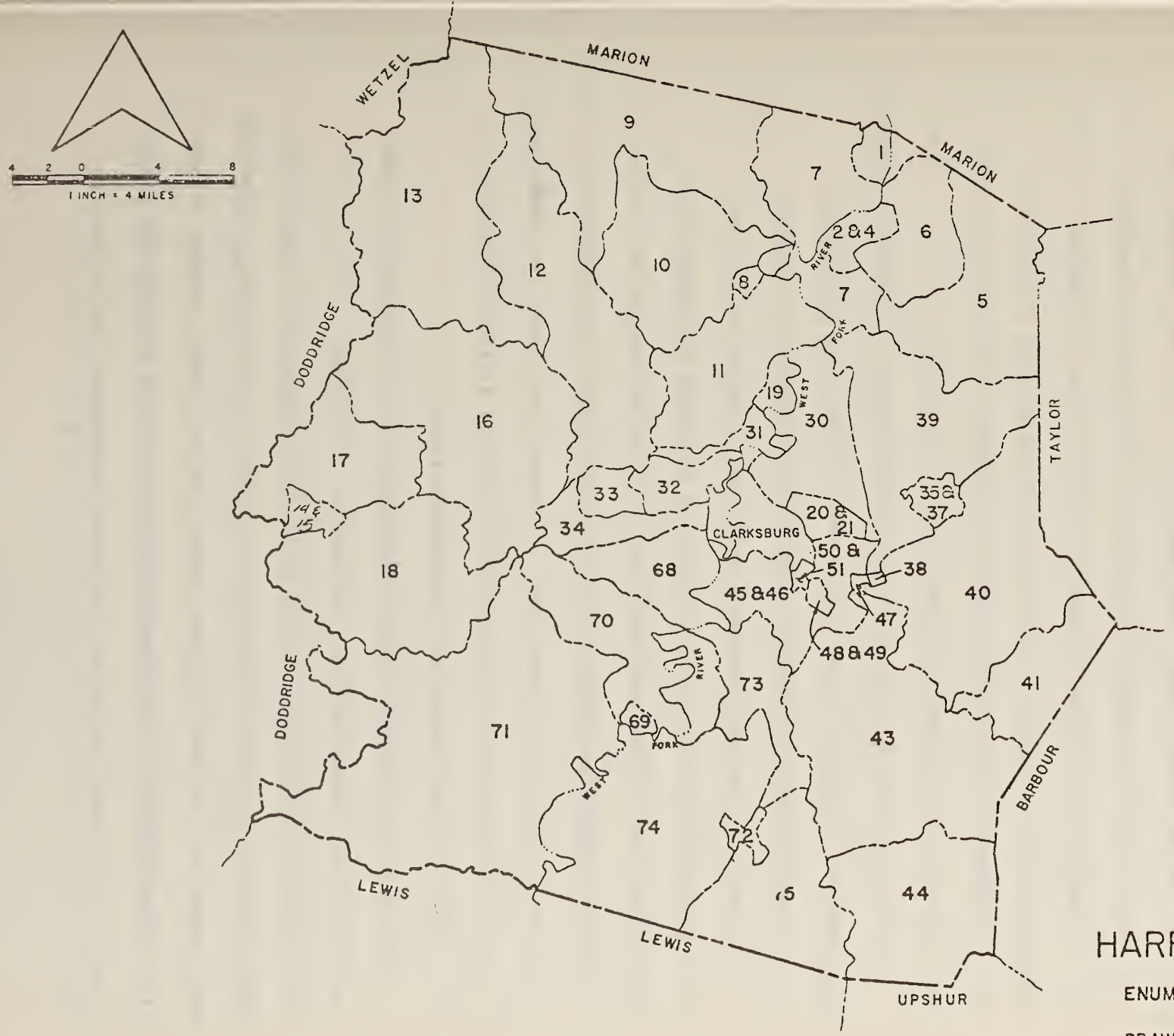
MONONGALIA, COUNTY

ENUMERATION DISTRICTS

DRAWN BY: REGION VI

PLANNING & DEVELOPMENT COUNCIL

FIGURE 19



HARRISON COUNTY

ENUMERATION DISTRICTS

DRAWN BY: REGION VI

PLANNING & DEVELOPMENT COUNCIL

FIGURE 20

vacancy status, units in structure, rooms, plumbing facilities, telephone, value and contract rent.

The second count tapes contain the same information as the first count, but with more cross-classifications, and for larger areal units. The census tract, state, county, and minor civil division (the equivalent of the census tract in some rural areas) are the areal units summarized. These are made up of a number of enumeration districts. In Northern West Virginia, a minor civil division is called a "magisterial district" and contains anywhere from one to thirty or more enumeration districts. A county may contain from six to ten minor civil divisions.

The third count tapes contain the same information as the first count tapes, but the areal unit is the city block, and the data pertain only to the urbanized areas of Standard Metropolitan Statistical Areas (SMSA).

Fourth count data contain information asked from only a portion of the total population, a sample of 20, 15, or 5 percent depending on the information. This information pertains to education, occupation, income, citizenship, and housing characteristics related to the condition of housing and availability of equipment such as automobiles. Data are summarized for census tracts, minor civil divisions, counties, states and SMSA's. All of the areas are larger than the enumeration district.

The fifth count summary tapes contain some of the information of the fourth count, but summarized for the enumeration district. The Bureau of the Census prepared a special set of fifth count tapes which present data summaries for five-digit zip code areas in SMSA's, and three-digit zip code areas elsewhere. In West Virginia, a three-digit zip code area would comprise several counties. Since much of the fifth count data are based on a sample of the total population, the error associated with the data is

relatively greater for the enumeration district than for larger areal units such as the minor civil division.

Census Data Collected

The first, second and fifth count tapes were utilized to extract data for the study area. The first count data obtained consisted of population by age, sex group, total population, tenure of occupied housing units, total housing units, availability of telephone, and household size. As mentioned in Chapter IV, the survey questionnaire was designed to be compatible with the categories utilized in the census. Figure 21 is an example of the data obtained. A special packaged computer program prepared by Data Use and Access Laboratories (DUALabs), Arlington, Virginia, was utilized to assess the census tapes. The program, titled "Mod-3," simplified the amount of programming necessary to obtain specific data elements and edited the output in the highly readable format shown in Figure 21. The program also performed mathematical operations on the categories such as addition, subtraction, division and multiplication, which permitted categories to be combined exactly as desired for comparison to the questionnaire response.

In Figure 21, the title indicates the county name, the number 033 identifies the county in the census numbering scheme, and "count one" refers to the first count data. "Question 19" means that the data pertain to question 19 in the rider survey. "ED Number" is the number used by the census to identify a particular enumeration district (see Figures 18-20), and "MCD Number" identifies the minor civil division to which the enumeration district belongs. Questions 18, 19, 20, and 22 refer, respectively, to telephone availability, tenure of occupied housing units, and age-sex.

HARRISON COUNTY 033 COUNT ONE QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	010	218	61	35	94	50	57	20	19
0002	010	224	118	68	128	60	42	26	18
0003	010	79	77	43	39	30	21	13	10
0004	010	221	128	66	106	82	48	26	21
00048	010	76	7	9	30	22	14	7	1
0005	010	149	48	28	63	43	34	13	16
0006	010	261	58	35	88	61	59	31	41
0007	010	348	95	70	127	92	73	42	39
0008	020	223	102	63	106	52	45	35	24
0009	020	199	55	33	80	42	36	29	24
0010	020	205	58	41	72	57	37	24	32

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	010	66	67	47	45	56	60	66
0002	010	67	68	49	51	70	73	91
0003	010	35	34	18	22	35	27	46
0004	010	76	90	49	63	80	61	74
00048	010	18	15	14	29	20	9	5
0005	010	54	51	34	31	44	32	32
0006	010	90	95	60	55	75	64	51
0007	010	142	97	82	72	79	78	96
0008	020	103	58	54	58	61	68	75
0009	020	98	57	45	41	58	48	42
0010	020	97	72	43	49	56	38	67

HARRISON COUNTY 033 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0001	010	67	66	43	46	49	52	50
0002	010	83	54	43	48	52	63	66
0003	010	36	28	15	23	30	25	23
0004	010	76	78	45	46	72	50	47
00048	010	21	10	11	23	19	12	8
0005	010	48	44	22	36	46	36	31
0006	010	110	104	52	49	62	52	69
0007	010	115	78	90	69	96	57	98
0008	020	90	52	52	42	43	46	79
0009	020	88	59	40	48	32	60	56
0010	020	66	54	52	40	49	53	43

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	010	373	407	845	287	224
0002	010	409	469	931	351	307
0003	010	180	217	424	167	138
0004	010	414	493	988	366	295
00048	010	104	110	233	83	80
0005	010	263	278	595	219	138
0006	010	498	490	1078	344	256
0007	010	603	646	1374	480	346
0008	020	404	477	957	371	279
0009	020	383	389	839	278	173
0010	020	357	422	842	282	214

FIGURE 21. CENSUS DATA EXAMPLE

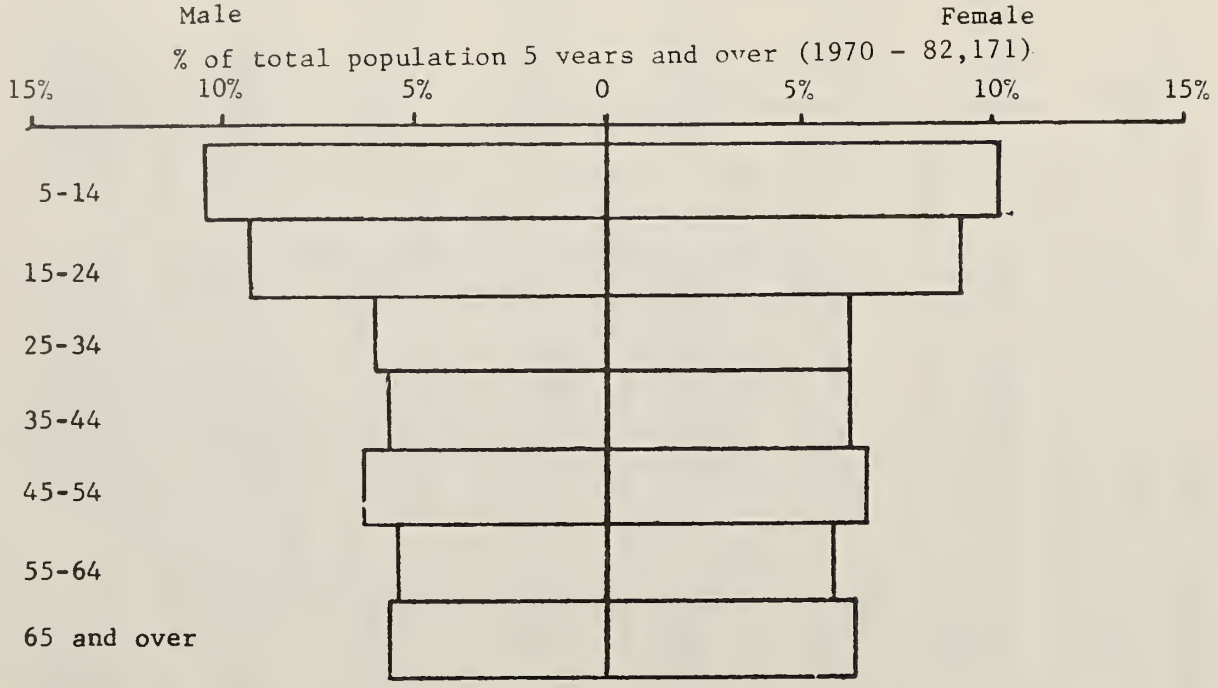
In addition, total population and total housing were obtained from the tapes. "Total number male" and "total number female" are the sums of the data shown separately by age-sex disaggregation. These totals do not include population under age 5. "Total ED Pop" does include population under age 5, however. Thus, in Figure 21 the sum of "total number male" plus "total number female" will not equal "total ED pop." Similarly, housing "owner occupied year-round" plus housing "renter occupied year-round" will not equal "total ED housing" because the latter includes vacant units and vacation homes. Figure 22 illustrates the age-sex breakdown for the population 5 years of age and older living in enumeration districts which contain the transit lines.

The second count data were utilized to verify the total populations of the first count. The Bureau of the Census has warned users that second count population totals for minor civil divisions, which are known to be correct, should be used to verify the first count, which underreport population totals in the enumeration districts of some southeastern states. Upon comparison, there was found to be no difference in the data totals, indicating that the accuracy of the first count cannot be improved.

Fifth count variables obtained for enumeration districts include household automobile registration, education completed, and annual income per household. A sample of the data are shown in Figure 23. Question 21 refers to years of school completed, question 17 refers to the number of automobiles registered to households, and question 23 refers to household income.

Additional Census-Related Data

In addition to the population summary tapes, a special census tape titled Master Enumeration District List (MEDlist) was utilized to determine



Age-Sex Distribution of Population 5 Years and Over Living in Census Enumeration Districts Served by Rural Public Transportation in Harrison, Marion and Monongalia Counties (Based on 1970 Census)•

FIGURE 22

HARRISON COUNTY 033 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	10	5	79	101	98	127	69	14	141	64	6
2	10	4	53	94	94	236	52	47	186	103	0
3	10	0	5	34	28	102	20	61	56	47	0
4	10	9	99	158	144	203	47	20	136	135	10
2004	10	0	15	18	37	23	24	9	37	37	0
5	10	0	46	99	90	107	15	22	106	46	19
6	10	33	115	148	135	131	5	15	137	110	28
7	10	27	107	228	191	168	40	20	283	75	8
8	20	17	142	63	85	204	46	36	196	77	0
9	20	0	85	159	114	87	18	27	118	129	7
10	20	13	99	108	112	83	38	18	129	76	0

HARRISON COUNTY 033 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0- 2,999	3,000- 5,999	6,000- 8,999	9,000- 11,999	12,000- 14,999	15,000 OR MORE
1	10	99	42	86	14	4	27
2	10	91	46	78	57	30	28
3	10	53	15	43	14	20	12
4	10	62	102	91	63	39	23
2004	10	20	5	14	24	14	5
5	10	34	30	54	35	9	11
6	10	110	50	88	55	27	6
7	10	101	105	127	65	21	5
8	20	96	52	79	38	20	28
9	20	72	52	85	63	15	12
10	20	90	90	43	23	10	7

HARRISON COUNTY 033 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	10	13.1	80.2733	39.4218	5.0	C.C	4.C
2	10	0.9	80.2876	39.3999			
3	10	0.4	80.2867	39.3934			
4	10	0.9	80.3029	39.3914			
5	10	13.9	80.2306	39.3736	15.5	6.C	11.C
6	10	6.9	80.2642	39.3967	14.5	3.5	7.C
7	10	12.1	80.3107	39.3929	18.5	C.C	12.5
8	20	0.4	80.3456	39.3768			
9	20	20.1	80.3864	39.4371	29.0	12.5	13.C
10	20	12.6	80.3707	39.3845	21.C	4.C	6.5

FIGURE 23. CENSUS DATA EXAMPLE

the geographic coordinates of the center of population of each enumeration district. Areas of enumeration districts were measured by hand using planimeters. Highway mileages on passable roadways were measured using a map wheel.

All of the above data were obtained for the 61 enumeration districts in Monongalia County, the 60 enumeration districts in Marion County, and the 78 enumeration districts in Harrison County. All data have been transferred to IBM cards for further use in analysis.

Need for Better Data

Although census data are probably the most complete available, they do have a major drawback; they can soon become outdated. Many changes may occur in an area during the ten-year period between censuses and there currently exists no adequate means of accurately updating the census data for sensitive variables, such as income and population density, so that these data will be more reliable for planning purposes.

Special Problems

Even though the census data were readily accessible they were difficult and time-consuming to retrieve. Also, the census information may not lend itself to cross-classification at a level suitable for forecasting. The reason for this is that the data may not be sufficiently disaggregated in terms of the variables desired for inclusion in a cross-classification model.

Sources of Relevant Government Data Improvement

There are improvements which could be made in the census data and its availability. The first would be to redraw enumeration district boundaries.

The enumeration district boundaries have been drawn for the convenience of the census takers and follow easily observable boundaries such as highways or rivers. In the case where a highway or river is used for the enumeration district boundary, a homogeneous community can be cut in two, with its population and socioeconomic characteristics then contributing to total characteristics in two differing enumeration districts. This may decrease the value of census data to the local planner.

The data should also be made more available to the local planner. Currently, the data are expensive and time-consuming to obtain and can be expeditiously accessed only at locations equipped with computer facilities. Many local planners, particularly in rural areas, have neither the funds nor the facilities to obtain the data.

Chapter VI

POSTAL RURAL ROUTE DATA

Purpose

The purpose of obtaining the postal rural route data was to investigate its possible use as a population density indicator in rural areas. Population density could be of importance in forecasting riders along individual routes. An alternative method of calculating population density would be to use census data for each enumeration district or minor civil division, in combination with highway mileages measured by hand. Or actual photographs or ground counts could be taken. Census data on population tend to age, however, and may predate recent local housing developments such as trailer parks. Postal information is up-to-date and available for all rural areas. This chapter describes collection procedure and data.

Data Collected

The postal rural route data which were obtained are presented in Tables 21-23 and Figures 24-26 immediately following this discussion.

The tables list all of the post offices within the study area which have rural postal routes by post office name and by zip code number. For each individually listed rural route, its length, the number of families served along the route, and the number of families served per route mile are also listed.

If each individual route were shown separately, a highly complex map would result that would be difficult to use. For this reason, areas with

the same zip code covered by adjacent routes were combined based on the similarity of number of families per mile. It was arbitrarily decided to use grouping increments of 10 families per route mile. A frequency plot of the routes based on number of families per route mile indicated a multi-modal distribution with breaks occurring near multiples of 10. Hence, adjacent routes with the same zip code were grouped together and a weighted average calculated if the number of families served per route mile was 0 to 9.9, 10 to 19.9, 20 to 29.9, and so on.

The accompanying maps show the counties within the study zone broken down into zip code areas which are bounded by the solid lines. The zip code and the number of families served per route mile are indicated for each rural route zip code area. Individual rural routes or groups of similar routes are shown in zip code areas where several routes exist and are bounded by dashed lines. The number of families served per route mile are indicated accordingly.

The crosshatched portions represent areas which are served by post office boxes or city routes. Unless otherwise indicated, these areas have the same zip code as does the surrounding rural route area.

It may be noted that some areas have no zip code designation. These areas are served by post offices outside the study area and, although the rural route and zip code information is not indicated, it could be obtained if desired.

Data Collection Procedure

The postal rural route data was collected by visiting the individual post offices to obtain the route layouts and the number of families served along each route. For the smaller post offices, the routes were laid out

POSTAL RURAL ROUTE DATA FOR HARRISON COUNTY

Post Office	Zip Code	Route No.	Route Length (Mi.)	Families Served	Families/ Rt. Mi.
Bridgeport	26330	1	16.1	300	18.6
Bridgeport		2	24.4	359	14.7
				Ave.	16.3
Bridgeport		3	5.3	250	47.2
Bristol	26332	1	27.0	219	8.1
Bristol		2	23.4	204	8.7
				Ave.	8.4
Clarksburg	26301	1	15.4	487	31.6
Clarksburg		3	16.3	497	30.5
				Ave.	31.0
Clarksburg		2	15.3	675	44.1
Clarksburg		5	11.1	507	45.7
				Ave.	44.8
Clarksburg		4	24.4	631	25.9
Lost Creek	26385	1	28.7	331	11.5
Lost Creek		2	28.2	357	12.7
				Ave.	12.1
Lumberport	26386	1	31.1	297	9.5
Mount Clare	26408	1	32.9	483	14.7
Salem	26426	1	12.2	175	14.3
Salem		2	1.8	51	28.3
Shinnston	26431	1	23.9	418	17.5
Shinnston		2	22.6	491	21.7
Wallace	26448	1	44.8	391	8.7
Wolf Summit	26462	1	19.3	269	13.9

TABLE 21

POSTAL RURAL ROUTE DATA FOR MONONGALIA COUNTY

Post Office	Zip Code	Route No.	Route Length (Mi.)	Families Served	Families/ Rt. Mi.
Blacksville	26521	1	2.6	37	14.2
Core	26529	1	26.9	240	8.9
Maidsville	26541	1	17.1	417	24.4
Morgantown	26505	1	49.1	507	10.3
Morgantown		2	35.2	502	14.3
				Ave.	12.0
Morgantown		3	30.1	640	21.3
Morgantown		7	22.2	564	25.4
				Ave.	23.0
Morgantown		4	19.7	732	37.2
Morgantown		6	16.7	521	31.2
Morgantown		8	16.5	595	36.1
Morgantown		11	10.2	371	36.4
				Ave.	35.2
Morgantown		5	35.1	307	8.7
Morgantown		9	43.6	396	9.1
				Ave.	8.9
Morgantown		10	8.9	561	63.0
Wadestown	26589	1	3.3	21	6.4
Wadestown		2	14.8	104	7.0
				Ave.	6.9
Wana	26590	1	9.7	70	7.2

TABLE 22

POSTAL RURAL ROUTE DATA FOR MARION COUNTY

Post Office	Zip Code	Route No.	Route Length (Mi.)	Families Served	Families/ Rt. Mi.
Carolina	26563	1	6.1	185	30.3
Fairmont	26554	1	27.7	600	21.7
Fairmont		2	30.4	613	20.2
Fairmont		7	22.8	573	25.1
				Ave.	22.1
Fairmont		3	22.6	670	29.7
Fairmont		6	21.6	568	26.3
				Ave.	28.0
Fairmont		4	32.8	597	18.2
Fairmont		5	8.4	659	78.5
Fairmont		9	7.6	534	70.3
				Ave.	74.6
Fairmont		8	29.2	468	16.0
Fairview		1	15.9	340	21.4
Fairview	26570	2	38.9	400	10.3
Farmington	26571	1	38.1	513	13.5
Mannington	26582	1	38.6	303	7.9
Mannington		2	49.8	419	8.4
				Ave.	8.2
Mannington		3	19.2	455	23.7
Mannington		4	22.7	316	13.9
Rivesville	26588	1	23.5	363	15.4
Rivesville		2	24.2	303	12.5
				Ave.	14.0
Worthington	26591	1	26.9	330	12.3

TABLE 23

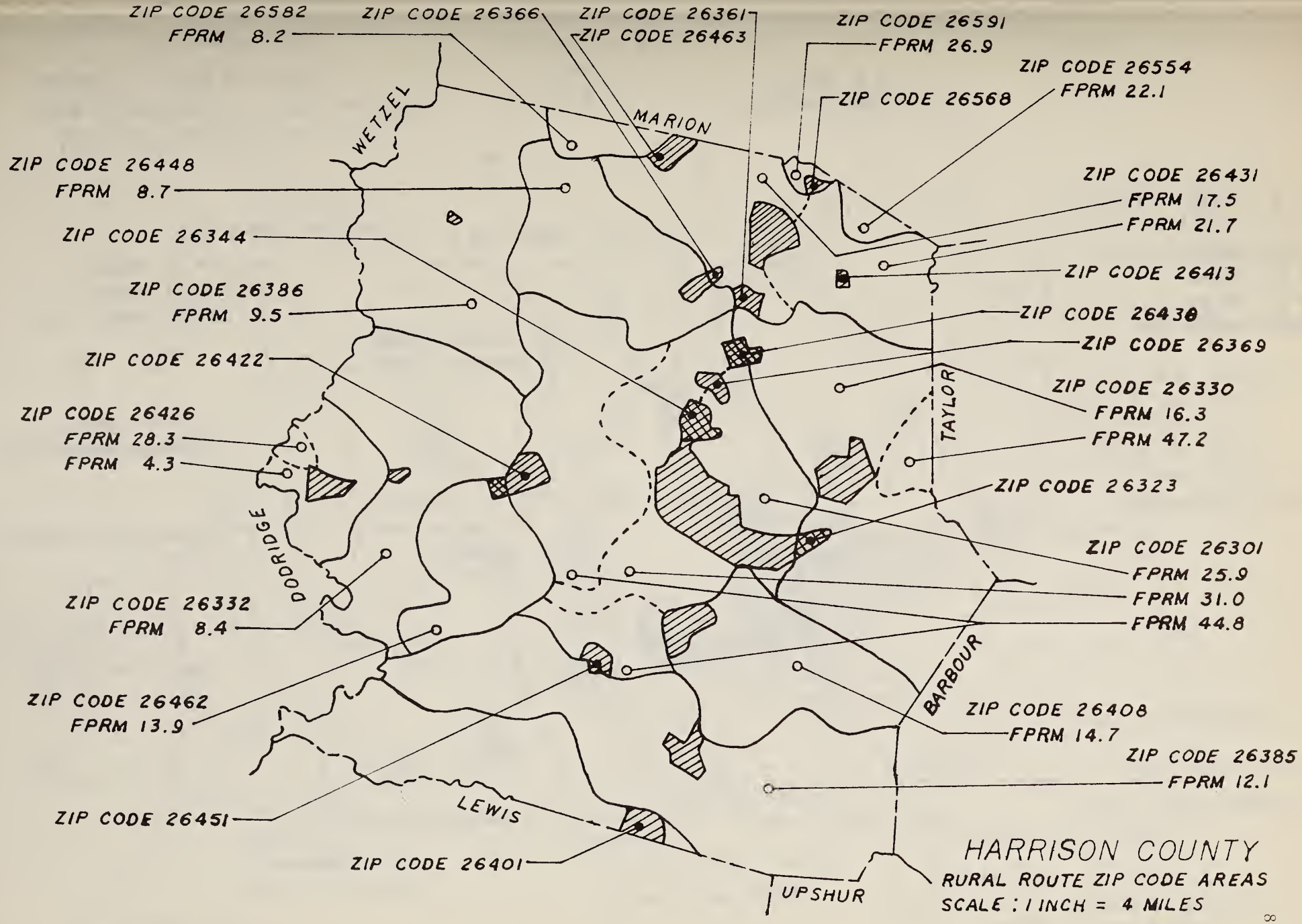
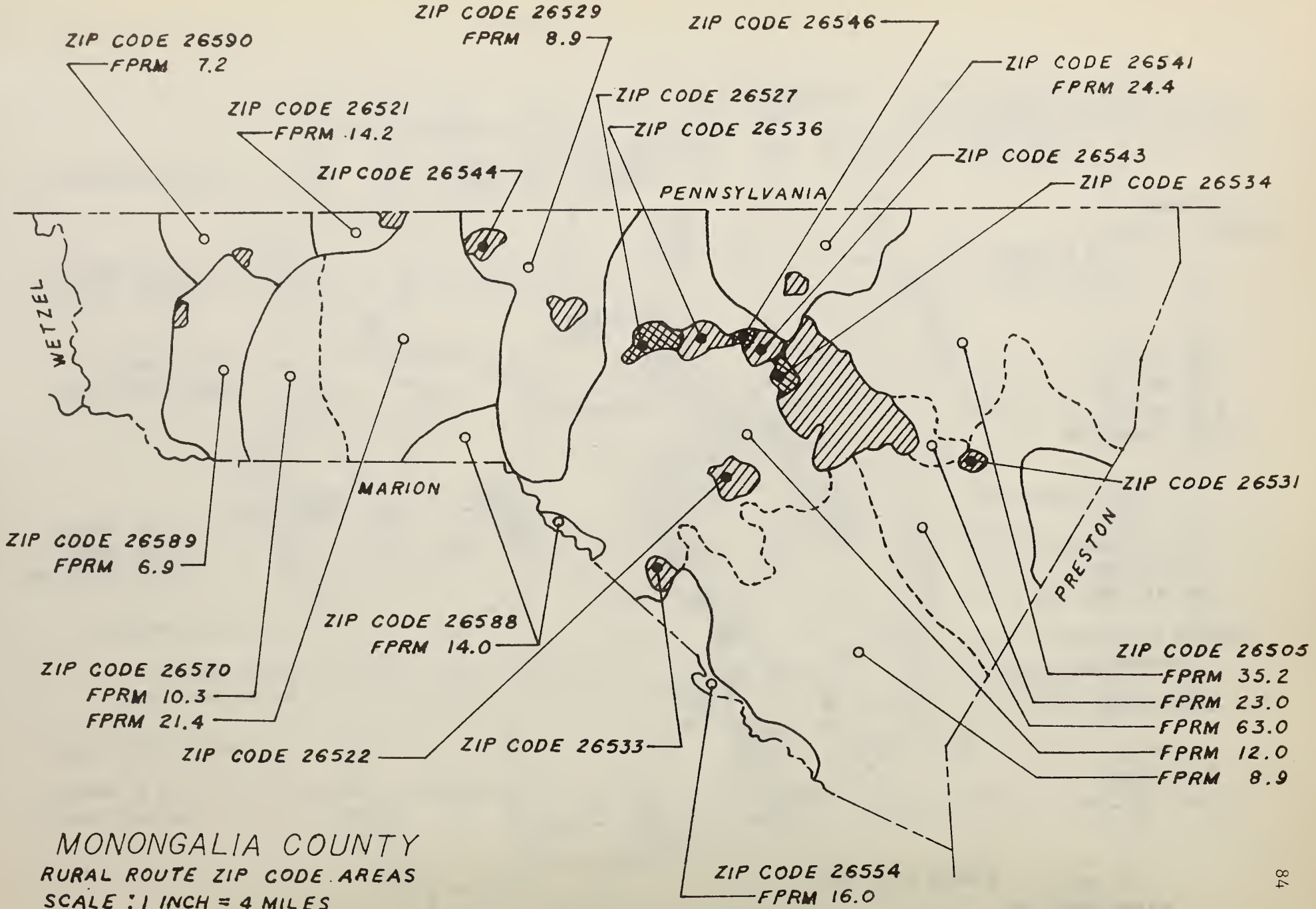

ZIP CODE 26582
FPRM 8.2
ZIP CODE 26366
ZIP CODE 26361
ZIP CODE 26463
ZIP CODE 26591
FPRM 26.9
ZIP CODE 26554
FPRM 22.1
ZIP CODE 26568
WETZEL
MARION
ZIP CODE 26448
FPRM 8.7
ZIP CODE 26431
FPRM 17.5
FPRM 21.7
ZIP CODE 26344
ZIP CODE 26413
ZIP CODE 26386
FPRM 9.5
ZIP CODE 26438
ZIP CODE 26369
ZIP CODE 26422
ZIP CODE 26330
FPRM 16.3
TAYLOR
ZIP CODE 26426
FPRM 28.3
FPRM 4.3
FPRM 47.2
ZIP CODE 26323
DODDRIDGE
ZIP CODE 26301
FPRM 25.9
FPRM 31.0
FPRM 44.8
ZIP CODE 26332
FPRM 8.4
BARBOUR
ZIP CODE 26462
FPRM 13.9
ZIP CODE 26408
FPRM 14.7
ZIP CODE 26385
FPRM 12.1
LEWIS
ZIP CODE 26451
ZIP CODE 26401
UPSHUR
HARRISON COUNTY
RURAL ROUTE ZIP CODE AREAS
SCALE : 1 INCH = 4 MILES

FIGURE 24



MONONGALIA COUNTY
RURAL ROUTE ZIP CODE AREAS
SCALE : 1 INCH = 4 MILES

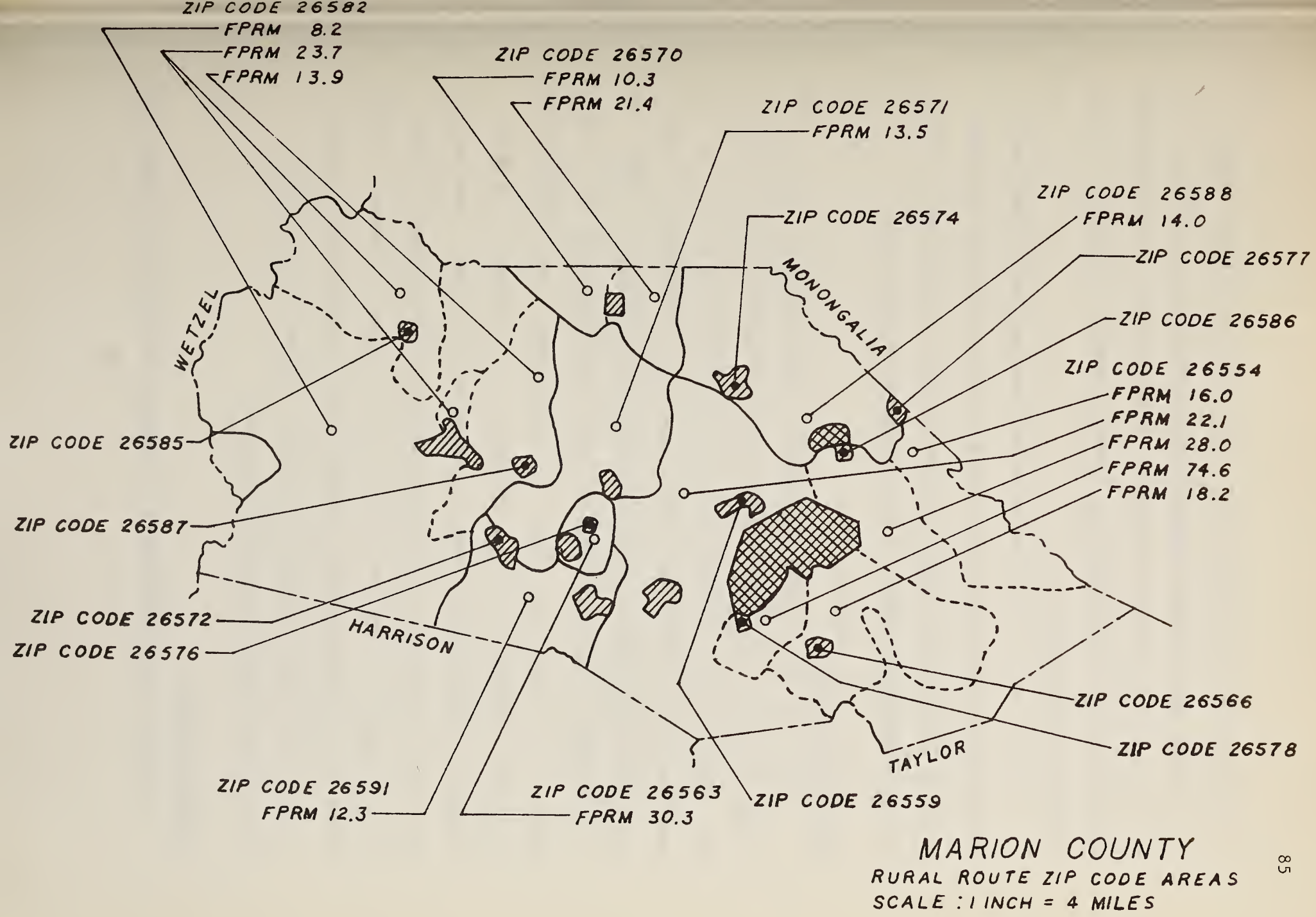

ZIP CODE 26582
FPRM 8.2
FPRM 23.7
FPRM 13.9
ZIP CODE 26570
FPRM 10.3
FPRM 21.4
ZIP CODE 26571
FPRM 13.5
ZIP CODE 26588
FPRM 14.0
ZIP CODE 26574
ZIP CODE 26577
MONONGALIA
WETZEL
ZIP CODE 26586
ZIP CODE 26554
FPRM 16.0
FPRM 22.1
FPRM 28.0
FPRM 74.6
FPRM 18.2
ZIP CODE 26585
ZIP CODE 26587
ZIP CODE 26572
ZIP CODE 26576
HARRISON
ZIP CODE 26566
ZIP CODE 26578
TAYLOR
ZIP CODE 26591
FPRM 12.3
ZIP CODE 26563
FPRM 30.3
ZIP CODE 26559
MARION COUNTY
RURAL ROUTE ZIP CODE AREAS
SCALE : 1 INCH = 4 MILES

FIGURE 26

on maps and needed only to be traced. The larger post offices, however, could supply only a sheet of geographic route descriptions. Where the rural routes served portions of counties both inside and outside the study area, only the route layout and the number of families served within the study area were obtained.

The rural routes were color-coded and drawn on county highway maps which were at a scale of one inch equals one mile. The routes were then traced with a map wheel to determine their lengths. These lengths were used to calculate the number of families served per route mile.

Need for Better Data

During the data collection procedure, it was found that there were inconsistencies in the formats of the data made available by the various post offices. All of the smaller post offices had routes laid out on maps, whereas the larger post offices (Morgantown, Clarksburg, and Fairmont) could only supply a typewritten geographic description of their rural routes. It was also found that there were usually only one or two people in the larger post offices who had knowledge of the rural route geography. Sometimes it took several days to get in contact with these people and even several more days to obtain the needed data. Needless to say, delays in the data collection procedure and inconsistencies in the data collected can cause costly delays in the project as a whole. Further, there is no single post office or postal service agency which can supply information on route locations for a state, region, or even a county. Each separate post office must be contacted.

Special Problems

The main problem encountered in obtaining the postal rural route data

was a direct result of inconsistencies in the available data. The geographic descriptions supplied by the larger post offices referred to county roads by local name rather than official state-designated route numbers. This made it very difficult to determine exactly what areas on the map were covered by the various routes and could have led to errors in the scaled route lengths.

The usefulness of the data is yet to be determined. As stated previously, the postal service data on families receiving service per mile are current whereas census data tend to be older. One drawback with the zip code rural route areal unit is that no socioeconomic data are available. Age-sex characteristics or income, for example, still must be interpolated from census data at the enumeration district level if it is desired to use the zip code rural route unit as a basis for building models. The most probable utility of the zip code data would be to provide estimates of the families per mile of highway in enumeration districts, where the enumeration district is retained as the basic unit of areal analysis.

Chapter VII

SUMMARY AND CONCLUSIONS

In general, census data, on-off counts, the rider survey, and route historical data were all obtained successfully. Specific comments follow.

1. The on-off counts and riders survey indicate that the demand for rural transit is characterized by a relatively small volume of riders traveling over relatively large distances. When one breaks the area down into smaller units, the size of enumeration districts, the number of riders approaches lower extremes, such as 0, 1, 2, 3 riders per day per enumeration district. This may make it difficult to obtain good linear regression models of demand using a number of riders per enumeration district as the dependent variable and enumeration district socioeconomic data as the independent variable because many enumeration districts have zero ridership. Thus, the range of variation for the dependent variable is small, and even though the range of variation and absolute values of the socioeconomic independent variables are all relatively large in value. Thus, unless enumeration districts are aggregated, in some manner prior to regression analysis, or route mileage and density variables are included, cross-classification may be a preferable approach to regression models.

2. The questionnaire data appear to provide interesting insights on what kinds of people are using rural service and what kinds of needs are being met. The data should make it possible to identify subpopulations which exhibit different demands and needs and, by appropriate factoring of the data, to build population-specific models of demand which are sensitive

to level of service (daily versus weekly service). The questionnaire administered was somewhat lengthy, and further examination of results will probably indicate that it can be shortened for future studies. Sampling presented a problem, in the sense that the procedure followed is biased toward frequent users who have a higher probability of being included in the sample, especially on the routes with daily service. By conducting the sampling on a number of different days of the week at different times of the month, as many different riders were sampled as could be obtained. Additional infrequent riders probably exist but could not be sampled without a substantial and expensive extension of the sampling period. The response rate was better than 60 percent for questionnaires that were distributed (by survey workers). Sensitive questions regarding income tended to be skipped by riders. Shortening the questionnaire might improve the response rate. The on-off counts and questionnaire could easily be administered by bus drivers on low volume weekly routes.

3. The census data were available on computer tapes, but were expensive and difficult to obtain because they required specialized computer procedures. Thus, the small planning agency might have difficulty obtaining them. The ease of obtaining the data could vary from state to state, however, since state level government (e.g., Governor's Office of Federal-State Relations in West Virginia) can take an initiative to provide the data if it so desires. Also, the Bureau of the Census may provide the data at a cost. Drawbacks of the data are that they age and can become unreliable for modeling with the passage of time since the last census. Also, the boundaries of the enumeration districts are not optimal for building travel demand models in rural areas, inasmuch as they follow highways and tend to split populations that may have similar trip-making

behavior, allocating the population characteristics to areal units which may have different dominant characteristics.

The postal rural route five-digit zip code area is intuitively appealing as a geographic unit of analysis because the Postal Service maintains current data on number of families being served and the data are readily obtained. But it has several severe shortcomings. The main shortcoming is the lack of socioeconomic data available for this areal unit. However, census enumeration districts might be aggregated and interpolated to approximate these areas. The second most important shortcoming is the apparent irrationality underlying the zip code rural route system itself. Rural routes and zip code areas have grown out of historical precedent, as modified by periodic economic crises. As a result, zip code areas vary widely in size and routes in terms of numbers of families served. Post offices without rural routes, having only boxes, and distinct zip codes, often lie wholly within areas served by rural carriers from a distant post office with a different zip code. In some cases, a county will deliver into neighboring counties, making it impossible to associate political boundaries with zip code areas. Still, it is possible that the zip code rural route areal unit may provide more accurate data on current population densities along transit routes than any other source short of aerial photography or ground counts.

In conclusion, the amount and type of data collected appear to be sufficient to test the feasibility of building the kinds of models described in the introduction. With appropriate factoring, the rider survey, on-off counts, census and postal route data should enable a variety of models to be examined.

REFERENCES

1. Briggs, Ronald. "Designing Transportation Systems for Low Density Rural Regions," paper presented at 71st Annual Meeting of the Association of American Geographers, Milwaukee, Wis., April, 1975.
2. Lindsay, Harry V., Jr. Rural Mass Transportation Plan, Cumberland Plateau Planning District, May, 1975.
3. RRC International. An Innovative Rural Public Transportation System Design for Chautaugua County, New York, Troy, N. Y., Jan., 1975.
4. Popper, Robert J.; Notess, Charles, B, and Zapata, Ricardo, N. The Demand for Special Transit Systems to Serve the Rural Elderly, paper presented at TRB, Jan., 1976.
5. Burkhardt, Jon and Millar, W. W. Estimating the Cost of Providing Rural Transportation Service, TRB, 54th Annual Meeting, 1975.
6. Burkhardt, Jon. Discussion of Popper et al., TRB, Jan., 1976.
7. Burkhardt, Jon E.; Eby, Charles L.; Abert, James G.; Lago, Armando; Hedrick, James L., and Spittel, Louis A. The Transportation Needs of the Rural Poor, RMC Report UR-072, Washington, D. C., July, 1969.
8. Burkhardt, Jon E.; Eby, Charles L.; Flynn, Donald; Lago, Armando, M., and Martin, Theodore, K. A Study of the Transportation Problems of the Rural Poor, Vols. I and II, RMC Report UR-171, Washington, D. C., Jan., 1972.
9. Hillegass, Tom. Transit Travel Estimation for Smaller Urbanized Areas, UMTA, Planning, Methodology and Technical Support Division, Sept., 1975 (mimeographed).
10. Anderson, R. B. and Hoel, L. A. Estimating Latent Demand and Cost for Statewide Transit Service, 53rd Annual Meeting of the TRB, Jan., 1974.

REFERENCES (cont.)

11. Neuzil, Dennis. "Preliminary Transit Patronage Estimation for Smaller Urban Areas via Transit Service Factor," Traffic Engineering, Aug., 1975, pp. 32-35.

12. Hauser, Edwin W. A Goals-Attainment Approach for Estimating Demands for Rural Transportation Services, 55th Annual Meeting of the TRB, Jan., 1976.

13. Kidder, Alice E. The Economics of Rural Public Transportation Programs, 54th Annual Meeting of the TRB, Jan., 1975.

14. Martin, Robert L. and Oppermann, Mary C. Rural Public Transportation - Alternative Systems, 55th Annual TRB, Jan., 1976.

15. Paaswell, Robert E.; Recker, Wilfred, W., and Milione, Vincenzo. A Profile of a Carless Population, State University of New York at Buffalo (no date).

16. Saltzman, Arthur; Blair, Marion; Johnson, Joyce, and Burkhardt, Jon. Predicting Rural Public Transportation System Effectiveness, The Transportation Institute, North Carolina A & T State University, Greensboro, N. C., 1974.

17. U. S. Department of Transportation. Transportation and the Rural Community - Report on the First Workshop on National Transportation Problems, May 30-31, 1974.

18. McKelvey, D. and Deucker, K. Transportation Planning: The Urban and Rural Interface and Needs of the Rural Elderly, Technical Report No. 26, Center for Urban and Regional Research, University of Iowa, Aug., 1974.

19. Notess, C. et al. Transportation of Elderly to Rural Social Services,

REFERENCES (cont.)

Center for Urban and Regional Studies, Virginia Polytechnic Institute, Blacksburg, Va., Aug., 1975.

20. Carstens, R. L. and Csanyi, L. H. "A Model for Estimating Transit Usage in Iowa Cities," Highway Research Record 213, pp. 42-49, 1968.

21. U. S. Bureau of the Census. Census of Population, 1970, 1st count, 2nd count, 5th count, MEDLIST.

22. DUALABS. Instruction Booklet for DUALabs' 70-Series (Mod-3) Program, Sept., 1970.

23. Taylor, Louise and Sen, Lalita. The Travel Behavior and Mobility Pattern of Low-Income Residents of Syracuse, New York, 55th Annual Meeting of the TRB, Jan., 1976.

24. U. S. Bureau of the Census. 1970 Census User's Guide, Parts I and II, U. S. GPO, 1970.

25. U. S. Dept. of Transportation. Urban Mass Transportation Travel Surveys, U. S. GPO, Washington, D. C., Aug., 1972.

26. Miller, Irwin and Freund, John. Probability and Statistics for Engineers, Prentice-Hall, Englewood Cliffs, N. J., 1965.

Appendix A

RIDER SURVEY QUESTIONNAIRE RESULTS

SAMPLE SIZE BY COUNTY AND TRANSIT ROUTE

COUNTY	ROUTE	FREQUENCY	PERCENT
HARRISON	ENTERPRS	11	4.721
HARRISON	JOHNSTON	12	5.150
HARRISON	KINCHLCE	13	5.579
HARRISON	LAUREL V	3	1.288
HARRISON	MCWHORTR	5	2.146
HARRISON	ROUTE 23	5	2.146
HARRISON	ROUTE 73	2	0.858
HARRISON	SALEM	4	1.717
HARRISON	SARDIS	13	5.579
HARRISON	WALLACE1	7	3.004
HARRISON	WALLACE2	7	3.004
HARRISON	WOLFSUMT	29	12.446
HARRISON	WYATT	5	2.146
MARION	CAROLINA	5	2.146
MARION	COLFAX	6	2.575
MARION	FAIRVIEW	7	3.004
MARION	KINGMONT	5	2.146
MARION	MANNGTON	1	0.429
MARION	WORTHGTN	6	2.575
MONGALIA	BLACKSVL	8	3.433
MONGALIA	CHEAT	34	14.592
MONGALIA	CROWN	17	7.296
MONGALIA	GRAFTON	6	2.575
MONGALIA	MT HTS	2	0.858
MONGALIA	STARCITY	20	8.584
TOTALS		233	100.000

SAMPLE SIZE BY COUNTY AND ENUMERATION DISTRICT OF BOARDING

COUNTY	ED	FREQUENCY	PERCENT
HARRISON	01	1	0.429
HARRISON	02	12	5.150
HARRISON	05	1	0.429
HARRISON	10	2	0.858
HARRISON	11	2	0.858
HARRISON	12	6	2.575
HARRISON	13	12	5.150
HARRISON	14	4	1.717
HARRISON	16	3	1.288
HARRISON	17	2	0.858
HARRISON	18	1	0.429
HARRISON	19	2	0.858
HARRISON	32	16	6.867
HARRISON	33	3	1.288
HARRISON	34	16	6.867
HARRISON	35	1	0.429
HARRISON	48	3	1.288
HARRISON	69	3	1.288
HARRISON	71	7	3.004
HARRISON	73	6	2.575
HARRISON	74	10	4.292
HARRISON	75	2	0.858
HARRISON	99	1	0.429
MARION	02	4	1.717
MARION	03	1	0.429
MARION	04	2	0.858
MARION	13	1	0.429
MARION	14	2	0.858
MARION	15	2	0.858
MARION	19	4	1.717
MARION	49	1	0.429
MARION	50	5	2.146
MARION	52	5	2.146
MARION	56	3	1.288
MONGALIA	01	2	0.858
MONGALIA	02	9	3.863
MONGALIA	03	6	2.575
MONGALIA	31	42	18.026
MONGALIA	33	1	0.429
MONGALIA	34	1	0.429
MONGALIA	35A	2	0.858
MONGALIA	35B	4	1.717
MONGALIA	39	5	2.146
MONGALIA	46	3	1.288
MONGALIA	47	4	1.717
MONGALIA	48	1	0.429
MONGALIA	55	4	1.717
MONGALIA	56	2	0.858
MONGALIA	57	1	0.429
TOTALS		233	100.000

SAMPLE SIZE BY COUNTY AND ENUMERATION DISTRICT OF DEBARKING

COUNTY	OFF	FREQUENCY	PERCENT
HARRISON	19	1	0.429
HARRISON	22	115	49.356
MARION	23	30	12.876
MONGALIA	01	4	1.717
MONGALIA	02	15	6.438
MONGALIA	03	3	1.288
MONGALIA	04	2	0.858
MONGALIA	31	43	18.455
MONGALIA	33	1	0.429
MONGALIA	34	1	0.429
MONGALIA	35A	2	0.858
MONGALIA	35B	1	0.429
MONGALIA	37	2	0.858
MONGALIA	39	1	0.429
MONGALIA	46	2	0.858
MONGALIA	47	6	2.575
MONGALIA	48	3	1.288
MONGALIA	55	1	0.429
TOTALS		233	100.000

SAMPLE SIZE BY RURAL POSTAL ROUTE

ZIP	RURROUTE	FREQUENCY	PERCENT
15362	9	1	0.429
26301	0	3	1.288
26301	3	2	0.858
26301	4	18	7.725
26330	2	1	0.429
26332	1	4	1.717
26332	2	3	1.288
26366	0	2	0.858
26385	0	1	0.429
26385	1	8	3.433
26385	2	3	1.288
26386	1	3	1.288
26408	0	5	2.146
26408	1	4	1.717
26422	0	6	2.575
26425	0	4	1.717
26426	1	1	0.429
26426	3	2	0.858
26431	0	9	3.863
26431	1	3	1.288
26431	2	2	0.858
26448	1	10	4.292
26451	0	3	1.288
26461	4	4	1.717
26462	0	5	2.146
26462	1	7	3.004
26463	0	1	0.429
26505	0	10	4.292
26505	1	4	1.717
26505	2	11	4.721
26505	3	1	0.429
26505	4	1	0.429
26505	5	2	0.858
26505	6	10	4.292
26505	7	17	7.296
26505	8	7	3.004
26505	9	5	2.146
26506	2	1	0.429
26506	6	1	0.429
26521	0	2	0.858
26521	7	2	0.858
26522	0	1	0.429
26522	2	2	0.858
26529	0	1	0.429
26529	1	2	0.858
26531	0	4	1.717
26533	0	1	0.429
26544	0	1	0.429
26554	1	3	1.288
26554	2	3	1.288
26554	4	4	1.717
26554	5	5	2.146
26563	0	3	1.288
26566	0	2	0.858
26570	1	1	0.429
26571	0	1	0.429
26574	0	4	1.717
26588	2	2	0.858
26591	0	2	0.858
99999	9	2	0.858
TOTALS		233	100.000

SAMPLE SIZE BY HOME ZIPCODE

ZIP	FREQUENCY	PERCENT
15362	1	0.429
26301	23	9.871
26330	1	0.429
26332	7	3.004
26366	2	0.858
26385	12	5.150
26386	3	1.288
26408	9	3.863
26422	6	2.575
26426	7	3.004
26431	14	6.009
26448	10	4.292
26451	3	1.288
26461	4	1.717
26462	12	5.150
26463	1	0.429
26505	68	29.185
26506	2	0.858
26521	4	1.717
26522	3	1.288
26529	3	1.288
26531	4	1.717
26533	1	0.429
26544	1	0.429
26554	15	6.438
26563	3	1.288
26566	2	0.858
26570	1	0.429
26571	1	0.429
26574	4	1.717
26588	2	0.858
26591	2	0.858
99999	2	0.858
TOTALS	233	100.000

SAMPLE SIZE BY MONTH AND DAY OF WEEK

MONTH	DAYWK	FREQUENCY	PERCENT
BLANK	THURSDAY	6	2.575
BLANK	TUESDAY	31	13.305
BLANK	WEDNESDY	2	0.858
APRIL	THURSDAY	2	0.858
APRIL	TUESDAY	33	14.163
APRIL	WEDNESDY	20	8.584
MARCH	FRIDAY	12	5.150
MARCH	MONDAY	18	7.725
MARCH	THURSDAY	60	25.751
MARCH	TUESDAY	19	8.155
MARCH	WEDNESDY	30	12.876
TOTALS		233	100.000

4.DID YOU COME FROM HOME JUST BEFORE BOARDING THE BUS?

HOME	FREQUENCY	PERCENT
NO	37	16.300
YES	190	83.700
TOTALS	227	100.000

THERE WERE 6 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

5.IF YOU WALKED TO THE BUS STOP,HOW LONG WAS YOUR WALK?

WALKTIME	FREQUENCY	PERCENT
ALT MODE	15	7.177
0-5 MIN	128	61.244
05-10MIN	36	17.225
10-15MIN	18	8.612
15& MORE	12	5.742
TOTALS	209	100.000

THERE WERE 24 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

6.HOW LONG DID YOU WAIT FOR THE BUS AFTER ARRIVING AT THE STOP?

WAITTIME	FREQUENCY	PERCENT
0-5 MIN	90	42.453
05-10MIN	71	33.491
10-15MIN	36	16.981
15& MORE	15	7.075
TOTALS	212	100.000

THERE WERE 21 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

7.DID YOU KNOW WHEN THE BUS WAS SUPPOSED TO COME?

KNOWLDGE	FREQUENCY	PERCENT
NO	11	4.867
YES	215	95.133
TOTALS	226	100.000

THERE WERE 7 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

9.HOW WILL YOU GET TO YOUR DESTINATION AFTER LEAVING THE BUS?

DESTMODE	FREQUENCY	PERCENT
ALT MODE	5	2.304
AUTO	10	4.608
TRANSFER	7	3.226
WALK	195	89.862
TOTALS	217	100.000

THERE WERE 16 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

10.HOW LONG WILL IT TAKE YOU TO WALK TO THIS DESTINATION?

DESTTIME	FREQUENCY	PERCENT
ALT MODE	14	6.897
0-5 MIN	108	53.202
05-10MIN	47	23.153
10-15MIN	15	7.389
15& MORE	19	9.360
TOTALS	203	100.000

THERE WERE 30 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

11.WHAT REASONS DID YOU HAVE FOR MAKING THIS TRIP TODAY?

WORK	FREQUENCY	PERCENT
NO RESP	170	73.276
WORK	62	26.724
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

SHOPPING	FREQUENCY	PERCENT
NO RESP	102	43.966
SHOPPING	130	56.034
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

MEDICAL	FREQUENCY	PERCENT
MEDICAL	48	20.690
NO RESP	184	79.310
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

BANKING	FREQUENCY	PERCENT
BANKING	69	29.741
NO RESP	163	70.259
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

11.WHAT REASONS DID YOU HAVE FOR MAKING THIS TRIP TODAY?

SCHOOL	FREQUENCY	PERCENT
NO RESP	212	91.379
SCHOOL	20	8.621
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

VISITING	FREQUENCY	PERCENT
NO RESP	201	86.638
VISITING	31	13.362
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

OTHER	FREQUENCY	PERCENT
NO RESP	187	80.603
OTHER	45	19.397
TOTALS	232	100.000

THERE WAS 1 MISSING VALUE EXCLUDED FROM THE ABOVE TOTALS

12.WHAT WAS THE SINGLE MAJOR REASON FOR MAKING THIS TRIP TODAY?

PRIMARY	FREQUENCY	PERCENT
BANKING	38	14.844
MEDICAL	31	12.109
OTHER	25	9.766
SCHOOL	18	7.031
SHOPPING	74	28.906
VISITING	9	3.516
WORK	61	23.828
TOTALS	256	100.000

THERE WERE 1375 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

13.HOW OFTEN DO YOU RIDE THE BUS?

FREQ	FREQUENCY	PERCENT
A. DAILY	50	21.739
B.2-4/WK	53	23.043
C. 1/WK	56	24.348
D.2-3/MO	46	20.000
E. 1/MO	16	6.957
F. <1/MO	9	3.913
TOTALS	230	100.000

THERE WERE 3 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

14.DO YOU CURRENTLY HOLD A DRIVER,S LICENSE?

LICENSE	FREQUENCY	PERCENT
NO	150	68.182
YES	70	31.818
TOTALS	220	100.000

THERE WERE 13 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

15.HOW MANY PERSONS LIVE AT YOUR HOUSEHOLD (EAT AND SLEEP)?

HHSIZE	FREQUENCY	PERCENT
1 PERSON	63	27.876
2 PERSON	57	25.221
3 PERSON	39	17.257
4 PERSON	30	13.274
5& MORE	37	16.372
TOTALS	226	100.000

THERE WERE 7 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

16.HOW MANY PERSONS IN YOUR HOUSEHOLD HAVE A DRIVERS LICENSE?

DRIVERS	FREQUENCY	PERCENT
NONE	67	32.367
1 PERSON	51	24.638
2 PERSON	38	18.357
3 PERSON	14	6.763
4 PERSON	7	3.382
5& MORE	30	14.493
TOTALS	207	100.000

THERE WERE 26 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

17.HOW MANY AUTOMOBILES ARE REGISTERED IN YOUR HOUSEHOLD?

AUTOS	FREQUENCY	PERCENT
A. NONE	88	42.512
B. ONE	73	35.266
C. TWO	35	16.908
D. THREE	9	4.348
F. >FOUR	2	0.966
TOTALS	207	100.000

THERE WERE 26 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

18.DO YOU HAVE A TELEPHONE IN YOUR HOUSEHOLD?

TELEPHON	FREQUENCY	PERCENT
NO	40	17.467
YES	189	82.533
TOTALS	229	100.000

THERE WERE 4 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

19.IS YOUR HOUSING OWNED BY YOU OR SOMEONE YOU LIVE WITH?

QUARTERS	FREQUENCY	PERCENT
OTHER	9	4.036
OWNED	172	77.130
RENTED	42	18.834
TOTALS	223	100.000

THERE WERE 10 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

20.TO WHAT AGE GROUP DO YOU BELONG?

AGE	FREQUENCY	PERCENT
05-14	2	0.873
15-24	45	19.651
25-34	14	6.114
35-44	21	9.170
45-54	29	12.664
55-64	30	13.100
65& OVER	88	38.428
TOTALS	229	100.000

THERE WERE 4 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

21.HOW MANY YEARS OF SCHOOL HAVE YOU COMPLETED?

EDUC	FREQUENCY	PERCENT
COL >4	3	1.370
COL 1-3	29	13.242
COL 4	3	1.370
ELEM 1-4	4	1.826
ELEM 5-6	8	3.653
ELEM 7-8	64	29.224
H.S. 1-3	46	21.005
H.S. 4	60	27.397
NONE	2	0.913
TOTALS	219	100.000

THERE WERE 14 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

22. SEX

SEX	FREQUENCY	PERCENT
FEMALE	183	82.432
MALE	39	17.568
TOTALS	222	100.000

THERE WERE 11 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

23.WHAT WAS THE TOTAL 1974 INCOME FOR YOUR HOUSEHOLD?

INCOME	FREQUENCY	PERCENT
$0-2999	64	38.554
$3-5999	42	25.301
$6-8999	23	13.855
$9-11999	18	10.843
12-14999	8	4.819
15& MORE	11	6.627
TOTALS	166	100.000

THERE WERE 67 MISSING VALUES EXCLUDED FROM THE ABOVE TOTALS

Appendix B

ON-OFF COUNTS BY ROUTE

APPENDIX B

In this appendix are shown the average number of people per day boarding and alighting on each route. Routes are as discussed in Chapter II. Route maps are shown in Figures 2-5 on pages 12, 13, 16 and 17, respectively. In each table, the numbers boarding and alighting are shown by Enumeration District (ED).

The technique of breaking down to enumeration districts is discussed in Chapter III, page 40. ED maps are shown in Figures 18-20 on pages 67-69. At the bottom of each table is shown the number of days for each route on which the average is based. A more detailed discussion is contained in Chapter III.

AVERAGE DAILY RIDERSHIP

MORGANTOWN-CHEAT

LOCATION	ON	OFF
MORGANTOWN ED. 6-31	47.25	20.75
BROOKHAVEN ED. 35A	3.87	11.87
RICHARD ED. 35B	0.25	2.75
DELLSLOW ED. 37	0.88	1.63
TYRONE ED. 2	8.25	21.0
CANYON ED. 3	6.25	6.25
STATE LINE ED. 1	3.0	5.0

Average of 4 days

AVERAGE DAILY RIDERSHIP

STAR CITY

LOCATION		ON	OFF
MORGANTOWN	ED. 6-31	8.75	16
BROOKHAVEN	ED. 35A	4.0	0.0
RICHARD	ED. 35B	0.125	0.0
DELLSLOW	ED. 37	0.375	0.0
TYRONE	ED. 2	7	0.75
CANYON	ED. 3	6.25	9.75

Average of 4 days (7:40 a.m. and 5:10 p.m. runs)

AVERAGE DAILY RIDERSHIP

MORGANTOWN-CROWN

LOCATION		ON	OFF
MORGANTOWN	ED. 6-31	31.0	23.67
HARMONY GROVE	ED. 46	3.83	6.16
BOOTH-NATIONAL	ED. 47	5.16	7.82
CROWN	ED. 48	6.00	8.33

Average of 3 days

AVERAGE DAILY RIDERSHIP

MORGANTOWN-GRAFTON (Wednesday)

LOCATION		ON	OFF
MORGANTOWN	ED. 6-31	7.50	8.0
TRIUNE	ED. 40	1.75	1.50
HALLECK	ED. 39	3.50	3.87
RIDGEDALE	ED. 38	2.75	2.13

Average of 4 days

AVERAGE DAILY RIDERSHIP

MORGANTOWN-GRAFTON (Saturday)

LOCATION	ON	OFF
MORGANTOWN ED. 6-31	2.00	6.00
TRIUNE ED. 40	0.67	0.33
HALLECK ED. 39	3.50	1.12
RIDGEDALE ED. 38	1.83	0.55

Average of 3 days

AVERAGE DAILY RIDERSHIP

MORGANTOWN-MT. HEIGHTS (Wednesday)

LOCATION	ON	OFF
MORGANTOWN ED. 6-31	7.0	5.5
KINGWOOD PIKE ED. 38	1.38	1.63
MT. HEIGHTS ED. 37	3.88	5.13

Average of 4 days

AVERAGE DAILY RIDERSHIP

MORGANTOWN-MT. HEIGHTS (Saturday)

LOCATION	ON	OFF
MORGANTOWN ED. 6-31	18.0	15.0
KINGWOOD PIKE ED. 38	0.84	1.84
MT. HEIGHTS ED. 37	13.84	15.84

Average of 3 days

AVERAGE DAILY RIDERSHIP

MORGANTOWN-BLACKSVILLE (Wednesday Only)

LOCATION		ON	OFF
MORGANTOWN	ED. 6-31	6.5	6.75
CORE	ED. 56	1.75	1.38
PENTRESS	ED. 57	1.0	0.62
BLACKSVILLE	ED. 55	4.0	4.5

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-KINGMONT

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	5.75	7.5
MILLERSVILLE KINGMONT	ED. 50	4.75	4.0
PLEASANT VALLEY	ED. 51	2.0	1.0

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-MANNINGTON

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	8.75	8.5
BARRACKVILLE	ED. 22	0.5	0.25
FARMINGTON	ED. 13	3.0	3.25
MANNINGTON	ED. 7-9	6.0	6.25

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-COLFAX

LOCATION	ON	OFF
FAIRMONT ED. 23-37	6.0	5.50
HOPEWELL ROAD ED. 51	3.125	4.0
COLFAX ED. 52	1.875	1.5

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-CAROLINA

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	7.25	6.75
THOBURN	ED. 14	0	0.25
WORTHINGTON	ED. 15	1.25	1.75
CAROLINA	ED. 19	5.0	.4.75

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-FAIRVIEW

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	7.5	6.0
RIVESVILLE	ED. 1	0.25	0.25
BAXTER	ED. 4	0.75	1.0
BAXTER	ED. 5	0.75	1.0
GRANT TOWN	ED. 2	2.75	2.75
BASNETTVILLE	ED. 6	0.25	1.0
FAIRVIEW	ED. 3	0.75	1.0

Average of 4 days

AVERAGE DAILY RIDERSHIP

FAIRMONT-WORTHINGTON

LOCATION		ON	OFF
FAIRMONT	ED. 23-37	14.4	14.2
MONONGAH	ED. 56	4.8	4.4
THOBURN	ED. 14	1.0	0.4
WORTHINGTON	ED. 15	1.0	2.2

Average of 5 days

AVERAGE DAILY RIDERSHIP

CLARKSBURG-ENTERPRISE

LOCATION		ON	OFF
CLARKSBURG	ED. 22-29	16.33	17.67
HEPZIBAH	ED. 19	5.0	4.0
MEADOWBROOK	ED. 11	2.0	1.67
GYPSY	ED. 7	1.0	3.67
SHINNSTON	ED. 2-4	8.67	8.0
ENTERPRISE	ED. 1	2.67	0.67

Average of 3 days

AVERAGE DAILY RIDERSHIP

CLARKSBURG-WOLF SUMMIT

LOCATION		ON	OFF
CLARKSBURG	ED. 22-29	56.5	68.5
WILLSONBURG	ED. 32	22.0	20.0
O'NEIL	ED. 33	7.0	3.0
REYNOLDSVILLE	ED. 34	10.5	9.5
WOLF SUMMIT	ED. 16	12	2.5
BRISTOL	ED. 18	0.25	0.25
SALEM	ED. 14-15	0.5	0.5
BRISTOL	ED. 17	0.25	0.25

Average of 2 days

HARRISON COUNTY DAILY RIDERSHIP

MONDAY I

LOCATION	ON	OFF
CLARKSBURG ED 22-29	9	1
WEST MILFORD ED 69	0	2
LOST CREEK ED 72	0	6
MT. CLAIR ED 73	3	3

HARRISON COUNTY DAILY RIDERSHIP

MONDAY II

LOCATION		ON	OFF
CLARKSBURG	ED 22-29	10	0
JARVISVILLE	ED 18	0	1.5
JARVISVILLE BENSON	ED 71	0	8.5

DAILY RIDERSHIP

TUESDAY I

LOCATION	ON	OFF
CLARKSBURG ED. 22-29	5	1
WALLACE ED. 13	0	4

DAILY RIDERSHIP

TUESDAY II

LOCATION	ON	OFF
CLARKSBURG ED. 22-29	4	0
McALPIN RT. 73 ED. 5	0	2
BRIDGEPORT ED. 35-37	0	1
ANMOORE ED. 38	0	1

HARRISON COUNTY

DAILY RIDERSHIP

WEDNESDAY I

LOCATION		ON	OFF
CLARKSBURG	ED. 22-29	7	0
QUIET DELL	ED. 43	0	2
JOHNSTOWN	ED. 44	0	3
LOST CREEK	ED. 72	0	1
MT. CLAIRE	ED. 73	0	1

DAILY RIDERSHIP

WEDNESDAY II

LOCATION	ON	OFF
CLARKSBURG ED. 22-29	1	0
SALEM ED. 14-15	0	1

HARRISON COUNTY

DAILY RIDERSHIP

THURSDAY I

LOCATION		ON	OFF
CLARKSBURG	ED. 22-29	9	0
SARDIS	ED. 12	0	6
MARSHVILLE	ED. 16	0	3

DAILY RIDERSHIP

THURSDAY II

LOCATION	ON	OFF
CLARKSBURG ED. 22-29	1	0
WEST MILFORD ED. 69	0	1

HARRISON COUNTY

DAILY RIDERSHIP

FRIDAY I

LOCATION	ON	OFF
CLARKSBURG ED. 22-29	6	0
PINE BLUFF ED. 7	0	6
ENTERPRISE ED. 1	0	2
SHINNSTON ED. 2-4	3	0
SALTWELL ED. 5	0	1

DAILY RIDERSHIP

FRIDAY II

LOCATION		ON	OFF
CLARKSBURG	ED. 22-29	10	0
WALLACE	ED. 13	0	4
BROWN	ED. 12	0	3
LUMBERPORT	ED. 8	0	1
HAYWOOD	ED. 10	0	2

Appendix C

CENSUS DATA

APPENDIX C

This appendix consists of the census data obtained for Harrison, Marion and Monongalia counties plus the other three counties in Planning Region VI of West Virginia--Doddridge, Taylor and Preston. Enumeration District maps and a discussion of the data are presented in Chapter V of the main report. Certain data items refer to questions used in the rider survey, which is described in Chapter IV of the main report.

DODDRIDGE COUNTY C17 COUNT ONE DATA QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	C25	140	33	27	65	32	20	13	16
0002	C25	111	45	34	59	24	16	11	15
0003	C15	151	34	22	47	31	34	18	33
0004	C15	68	26	10	30	18	16	7	13
0005	040	127	33	30	65	14	22	18	11
0006	C40	140	122	79	73	45	35	14	16
0007	C40	160	55	39	77	28	34	19	18
0008	C40	122	26	37	56	11	19	6	19
0009	CC5	180	53	30	76	38	32	21	36
0010	C35	48	21	10	30	9	7	5	8
0011	010	47	6	5	23	12	6	4	3
0012	C30	96	20	31	39	18	7	10	11
0013	C20	135	50	20	48	32	34	21	30

HARRISON COUNTY 033 COUNT ONE QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	010	218	61	39	94	50	57	20	19
0002	010	224	118	68	128	60	42	26	18
0003	010	79	77	43	39	30	21	13	10
0004	010	221	128	66	106	82	48	26	21
0004B	010	76	7	9	30	22	14	7	1
0005	010	149	48	28	63	43	34	13	16
0006	010	261	58	39	88	61	59	31	41
0007	010	348	95	70	127	92	73	42	39
0008	020	223	102	63	106	52	45	35	24
0009	020	199	55	33	80	42	36	29	34
0010	020	205	58	41	72	57	37	24	32
0011	020	220	74	33	106	55	29	30	41
0012	035	246	72	29	86	59	52	41	51
0013	035	248	67	47	103	55	35	20	55
0014	045	262	141	90	136	74	56	21	26
0015	045	212	117	89	112	49	43	21	15
0015B	045	0	0	0	0	0	0	0	0
0016	045	257	76	38	109	61	54	40	31
0017	045	240	66	44	110	46	49	25	32
0018	045	191	38	35	63	40	43	28	20
0019	015	213	47	38	99	50	37	16	20
0020	015	214	76	45	73	57	39	39	37
0021	015	87	46	22	39	20	21	18	13
0022	015	301	179	89	168	94	67	40	22
0023	015	267	96	68	124	56	56	30	29
0024	015	326	145	62	147	89	75	54	44
0025	015	271	173	82	150	83	65	37	27
0026	015	162	261	98	183	55	46	21	20
0027	015	290	211	112	174	99	54	29	33
0027B	015	0	2	0	0	0	0	0	0
0028	015	74	264	158	81	43	28	12	16
0029	015	188	132	57	95	74	35	24	35
0030	015	258	43	38	92	56	43	31	41
0031	015	163	47	22	61	46	38	17	26
0032	015	236	75	39	102	53	53	30	34
0033	015	60	21	13	23	11	15	5	14
0034	015	308	98	54	117	73	67	39	56
0035	040	434	76	61	128	109	122	50	40
0036	040	541	69	62	178	125	130	65	50
0037	040	278	120	76	116	69	70	41	26
0038	040	157	54	35	54	33	32	24	33
0039	040	482	71	59	147	104	107	75	61
0040	040	337	87	47	111	94	73	56	43
0041	040	13	8	1	6	6	3	1	4
0042	025	15	9	1	10	3	4	5	1
0043	025	343	80	47	133	77	76	47	43
0044	025	45	16	8	21	8	11	7	6
0045	005	222	106	54	94	49	58	23	50
0046	005	109	36	16	35	22	30	16	26

HARRISON COUNTY 033 COUNT ONE QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0047	005	40	6	6	20	2	8	4	6
0048	005	255	89	63	95	65	49	26	46
0049	005	227	56	35	94	64	46	21	23
0050	005	269	85	41	127	77	61	31	17
0051	005	298	171	76	160	88	88	37	20
0052	005	466	135	95	229	110	92	53	22
0053	005	0	13	1	7	3	2	0	0
0054	005	270	92	60	157	62	47	20	16
0055	005	167	96	56	104	39	38	12	14
0056	005	234	175	84	151	82	46	27	19
0057	005	253	298	148	196	102	53	24	28
0058	005	75	224	123	103	32	18	12	11
0059	005	131	333	246	111	62	24	15	6
0060	005	374	80	61	162	93	68	39	31
0061	005	164	293	153	155	63	27	32	27
0062	005	254	202	125	162	76	48	10	35
0063	005	249	136	83	125	64	52	27	34
0064	005	426	212	150	240	109	73	40	26
0065	005	185	168	65	117	64	54	25	28
0066	005	205	46	34	104	42	39	18	14
0067	005	318	86	40	132	95	70	35	32
0068	005	247	40	27	82	50	67	36	25
0069	050	107	19	22	46	22	20	9	7
0070	050	124	42	9	46	44	31	20	16
0071	050	242	71	30	115	55	38	34	41
0072	030	136	45	27	59	35	24	20	16
0073	030	224	77	43	88	55	44	32	39
0074	030	221	77	46	64	75	43	30	40
0075	030	100	29	17	35	23	23	12	19

MARION COUNTY 049 COUNT ONE QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	025	269	114	82	107	66	71	32	25
0002	025	244	79	58	96	67	54	25	23
0003	025	150	79	49	71	43	37	10	19
0004	025	263	57	56	89	63	56	34	22
0005	025	125	40	28	52	34	19	16	16
0006	025	278	62	51	101	64	60	25	39
0007	020	307	193	121	161	79	68	29	42
0008	020	84	29	26	38	18	17	9	5
0009	020	260	123	75	137	71	44	32	24
0010	020	331	86	51	138	71	59	41	57
0011	020	265	83	49	122	74	48	19	36
0012	020	116	19	21	44	20	18	15	17
0013	015	148	70	47	82	32	24	17	16
0014	015	154	20	25	58	31	26	16	18
0015	015	71	37	32	25	25	12	7	7
0016	015	285	58	41	85	74	55	27	61
0017	015	263	64	41	94	54	61	39	38
0018	015	283	84	46	108	71	47	35	60
0019	015	314	69	52	131	75	62	33	30
0020	015	346	64	59	134	77	62	37	41
0021	015	124	33	24	45	30	25	18	15
0022	005	467	96	104	182	110	82	56	29
0023	005	304	119	80	137	84	66	32	24
0024	005	311	116	78	144	76	60	31	38
0025	005	189	219	134	134	55	34	24	27
0026	005	238	194	112	152	76	38	23	31
0027	005	157	142	74	121	41	33	18	12
0028	005	299	197	113	197	76	62	33	15
0029	005	361	59	50	166	79	74	27	24
0030	005	441	63	74	187	85	92	43	23
0031	005	413	74	71	190	77	78	45	26
0032	005	187	124	52	126	53	40	26	14
0033	005	160	276	152	166	61	35	10	12
0034	005	124	304	162	142	60	21	28	15
0035	005	24	160	101	58	12	7	3	3
0036	005	134	146	75	78	38	40	22	27
0037	005	195	136	77	102	52	43	23	34
0038	005	245	112	58	118	55	59	33	34
0039	005	308	54	42	130	80	49	39	22
0040	035	316	126	67	149	88	65	39	36
0041	035	372	79	59	119	93	89	38	53
0042	035	419	60	46	159	97	76	55	46
0043	030	334	151	90	182	86	74	24	29
0044	030	340	122	78	169	87	67	32	29
0045	030	238	100	60	121	69	50	21	17
0046	030	97	147	79	72	42	30	12	9
0047	030	275	164	92	145	76	72	26	28
0048	030	309	102	84	143	82	52	29	21
0049	030	221	89	42	70	83	53	29	33
0050	030	357	75	55	147	83	81	34	32
0051	030	491	88	75	196	114	102	55	37
0052	030	126	32	17	51	26	43	10	11
0053	030	289	40	47	107	67	44	32	32
0054	010	131	19	11	41	41	41	11	5
0055	010	349	103	51	161	91	84	34	31
0056	010	166	50	35	71	50	24	24	12
0057	010	0	0	0	0	0	0	0	0
0058	010	393	55	58	133	72	100	53	32
0059	010	220	41	24	62	52	66	29	28
0060	010	250	65	52	85	54	53	36	35

MONONGALIA COUNTY 061 COUNT ONE QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	035	248	49	21	88	61	54	38	25
0002	035	331	77	38	105	87	97	44	37
0003	035	306	72	44	113	88	52	34	47
0004	035	293	77	53	140	72	52	34	19
0005	030	302	144	71	144	87	70	50	24
0006	030	183	90	46	70	56	51	29	21
0007	030	213	86	72	80	59	37	29	22
0008	030	214	132	52	113	74	57	26	24
0009	030	128	198	89	112	73	24	18	10
0010	030	114	151	48	102	70	23	13	9
0011	030	199	97	57	81	67	41	29	21
0012	030	228	81	27	104	42	65	41	30
0013	030	173	82	39	86	51	45	27	7
0014	030	197	87	36	90	66	53	25	14
0015	030	122	83	56	56	32	34	13	14
0016	030	158	102	69	100	35	23	22	11
0017	030	216	157	95	135	47	51	28	17
0018	030	49	193	85	99	34	10	9	5
0019	030	33	294	164	100	33	18	4	8
0020	030	94	208	80	128	46	32	7	9
0021	030	116	177	89	107	52	34	9	2
0022	030	131	346	106	156	110	64	27	14
0023	030	76	252	104	127	51	30	8	8
0024	030	124	359	156	192	68	39	21	7
0025	030	202	176	83	125	72	55	27	16
0026	030	162	48	22	62	44	43	25	14
0027	030	157	223	78	166	73	42	10	11
0028	030	124	458	130	191	99	123	25	14
0029	030	245	45	25	100	57	51	30	27
0030	030	205	15	26	63	56	34	27	14
0031	030	564	178	48	198	146	174	116	60
0032	030	208	133	55	137	85	47	15	2
0033	030	355	314	120	256	142	89	34	28
0034	030	352	155	90	203	94	66	26	28
0035	030	373	51	50	116	101	87	43	27
00358	030	309	154	53	137	85	98	48	42
0036	030	0	0	0	0	0	0	0	0
0037	030	285	58	34	81	69	70	35	54
0038	020	275	82	37	116	77	56	37	34
0039	020	256	54	37	117	57	42	22	35
0040	020	272	46	27	111	61	46	39	34
0041	025	289	136	61	168	96	47	32	21
0042	025	263	167	61	162	72	71	37	27
0043	025	303	171	65	149	105	81	38	36
0044	025	257	119	39	97	91	75	46	28
0045	025	208	104	42	97	62	52	34	25
0046	025	157	37	26	54	30	47	18	19
0047	025	250	53	29	94	50	50	40	40
0048	025	205	66	41	90	36	39	29	36
0049	025	173	57	30	70	38	31	26	35
0050	010	11	8	1	7	6	4	0	1
0051	010	64	40	23	36	14	8	5	18
0052	010	209	77	47	82	47	40	30	40
0053	010	179	53	24	84	38	38	23	25
0054	010	253	108	56	97	64	53	34	57
0055	015	64	27	16	32	18	7	10	8
0056	015	238	73	32	94	64	46	31	44
0057	015	226	71	52	90	53	45	23	34
0058	015	179	41	24	66	49	42	16	23
0059	005	156	38	26	59	38	34	17	20
0060	005	151	42	31	62	35	22	19	25

PRESTON COUNTY C77 COUNT ONE DATA QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	C05	25	4	5	10	6	4	1	3
0002	C05	50	18	13	23	7	7	10	8
0003	C05	215	50	23	80	45	47	34	36
0004	C05	124	36	23	50	31	27	17	12
0005	C40	183	103	48	84	63	37	27	27
0006	C4C	110	26	27	50	25	14	10	10
0007	C40	300	60	32	95	62	71	45	55
0008	C40	276	118	32	107	81	54	50	70
0009	C40	221	45	37	65	62	36	32	34
0010	C20	194	37	18	69	42	48	26	28
0011	020	186	50	37	61	45	44	25	24
0012	C25	77	24	15	26	30	9	10	11
0013	C25	199	54	56	95	29	36	17	20
0014	C25	162	86	43	80	40	33	26	26
0015	C25	19	11	5	8	2	7	3	5
0016	C25	139	32	24	65	22	25	14	21
0017	C25	133	44	19	60	26	25	14	33
0018	C25	152	59	23	63	37	33	17	38
0019	C10	291	78	43	127	74	54	42	29
0020	C10	301	199	120	146	86	73	39	36
0021	010	106	42	33	64	16	22	8	5
0022	C1C	187	40	16	62	45	42	27	35
0023	010	300	108	39	102	86	80	45	56
0024	010	167	53	24	62	28	45	22	39
0025	C15	117	26	25	39	27	22	10	20
0026	015	182	58	28	64	52	37	28	31
0027	C15	97	41	17	40	32	17	15	17
0028	C3C	186	63	56	77	38	37	19	22
0029	030	157	46	25	68	40	32	20	18
0030	030	295	89	46	112	75	60	37	54
0031	030	215	63	39	72	41	50	31	45
0032	035	0	0	0	0	0	0	0	0
0033	C35	225	72	39	95	41	44	28	50
0034	C35	197	58	28	84	52	42	23	26

TAYLOR COUNTY C91 COUNT ONE DATA QUESTION 19

E D NUMBER	M C D NUMBER	OWNER OCCUPIED YR ROUND	RENTER OCCUPIED YR ROUND	OTHER PERS PER HOUSE NONE	OTHER PERS PER HOUSE ONE	OTHER PERS PER HOUSE TWO	OTHER PERS PER HOUSE THREE	OTHER PERS PER HOUSE FOUR	OTHER PERS PER HOUSE FIVE MORE
0001	C15	246	66	64	101	61	48	19	19
0001B	C15	13	18	11	10	5	3	0	2
0002	C15	192	29	29	74	37	30	30	21
0002B	C15	234	45	56	97	56	32	26	12
0003	C15	49	22	14	19	13	7	8	10
0003B	C15	41	10	10	21	9	6	0	5
0004	C15	118	24	19	41	18	19	25	20
0005	C05	172	46	25	68	55	32	18	20
0006	CC5	210	58	34	84	61	40	21	28
0007	C2C	96	49	20	40	32	25	13	15
0008	020	127	50	26	54	38	21	17	21
0009	C20	121	63	33	57	31	22	18	23
0010	C10	208	94	46	88	53	43	30	42
0011	010	152	58	39	73	37	25	15	21
0011B	C10	7	2	3	1	0	0	1	4
0012	C25	286	86	77	124	62	49	35	25
0013	C25	191	68	52	91	45	34	12	25
0014	C25	190	87	66	88	41	40	21	21
0015	C25	238	91	81	108	43	44	29	24
0016	025	206	121	100	98	53	26	32	18
0017	C30	171	50	34	70	45	35	14	23
0017B	C30	53	9	5	23	10	13	3	8
0018	030	93	31	16	48	18	14	11	17

DODDRIDGE COUNTY 017 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	C25	42	41	21	23	40	35	37
0002	025	41	32	16	18	30	29	42
0003	C15	82	54	35	34	38	35	32
0004	C15	35	25	8	21	22	18	24
0005	040	33	31	19	30	28	27	52
0006	C40	50	59	28	31	56	46	80
0007	C40	51	40	32	23	41	44	50
0008	040	51	17	22	25	16	22	48
0009	CC5	102	74	39	35	46	50	64
0010	C35	20	4	10	10	12	13	24
0011	010	7	7	4	5	14	12	23
0012	030	25	21	11	11	26	23	31
0013	C2C	67	56	38	31	48	31	33

DODDRIDGE COUNTY 017 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0001	025	48	29	21	21	34	31	54
0002	025	50	33	15	20	27	30	39
0003	C15	81	62	41	25	43	34	43
0004	C15	34	20	8	19	19	23	19
0005	040	45	34	12	23	32	18	45
0006	040	47	44	34	26	37	32	52
0007	040	49	54	46	25	36	47	50
0008	040	47	23	14	39	22	14	38
0009	C05	91	60	39	41	34	50	59
0010	C35	27	16	7	9	6	15	28
0011	010	21	10	4	9	11	13	14
0012	030	28	15	20	11	15	28	29
0013	C20	86	54	25	32	41	30	43

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	010	66	67	47	45	56	60	66
0002	010	67	68	49	51	70	73	91
0003	010	35	34	18	22	35	27	46
0004	010	76	90	49	63	80	61	74
0004B	010	18	15	14	29	20	9	5
0005	010	54	51	34	31	44	32	32
0006	010	90	95	60	55	75	64	51
0007	010	142	97	62	72	79	78	96
0008	020	103	58	54	58	61	68	75
0009	020	98	57	45	41	58	48	42
0010	020	97	72	43	49	56	38	67
0011	020	82	66	68	46	61	48	75
0012	035	121	83	80	51	60	53	57
0013	035	107	81	44	49	75	57	80
0014	045	75	77	48	56	65	66	119
0015	045	57	277	38	38	53	67	96
0015B	045	0	0	0	0	0	0	0
0016	045	103	62	60	74	63	65	60
0017	045	116	146	49	51	49	55	77
0018	045	62	66	41	51	43	34	38
0019	015	63	52	38	42	63	54	67
0020	015	104	73	57	45	70	61	38
0021	015	59	32	22	31	36	20	25
0022	015	122	90	74	76	122	93	101
0023	015	111	75	55	63	72	76	94
0024	015	130	141	80	92	118	92	83
0025	015	90	108	68	79	97	98	102
0026	015	59	107	55	55	95	92	135
0027	015	100	108	69	91	119	85	119
0027B	015	2	0	2	0	0	0	0
0028	015	49	53	35	37	64	53	75
0029	015	85	78	51	55	79	73	77
0030	015	123	74	47	64	69	39	65
0031	015	73	62	32	43	48	40	36
0032	015	87	82	52	66	54	55	51
0033	015	29	17	15	12	22	19	16
0034	015	129	104	84	80	86	75	80
0035	040	193	102	108	139	109	75	80
0036	040	248	139	117	171	148	89	76
0037	040	110	84	65	86	86	67	70
0038	040	83	51	43	47	46	33	38
0039	040	188	149	107	146	125	79	62
0040	040	157	94	98	93	88	65	87
0041	040	8	4	6	4	3	4	4
0042	025	4	10	5	2	4	4	4
0043	025	126	101	88	88	79	86	77
0044	025	19	8	12	9	10	11	18
0045	005	106	89	57	57	71	44	66
0046	005	62	44	27	29	33	19	27

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0047	005	16	5	9	10	12	7	11
0048	005	117	87	51	74	83	63	59
0049	005	72	71	52	56	65	50	45
0050	005	84	97	61	75	82	56	51
0051	005	95	137	71	94	95	99	85
0052	005	127	128	96	97	133	137	121
0053	005	0	7	2	0	1	0	5
0054	005	63	59	43	54	81	82	113
0055	005	55	42	43	39	45	53	91
0056	005	84	90	51	58	87	73	119
0057	005	93	128	71	65	94	125	136
0058	005	34	46	26	37	56	81	120
0059	005	33	57	37	43	70	85	153
0060	005	115	99	80	88	126	81	73
0061	005	74	88	33	63	73	101	179
0062	005	98	83	47	58	86	101	180
0063	005	84	78	44	69	80	81	110
0064	005	97	121	74	77	127	137	191
0065	005	85	81	73	54	74	58	86
0066	005	56	43	34	37	77	47	62
0067	005	113	99	73	97	93	59	68
0068	005	130	54	57	83	61	43	48
0069	050	36	30	13	20	26	19	41
0070	050	57	57	38	32	35	32	21
0071	050	114	82	52	51	69	53	74
0072	030	51	36	34	33	37	32	49
0073	030	108	72	52	59	61	50	55
0074	030	97	66	65	46	55	70	61
0075	030	40	34	20	32	24	19	32

HARRISON COUNTY 033 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0001	010	67	66	43	46	49	52	50
0002	010	83	54	43	48	52	63	66
0003	010	36	28	15	23	30	25	23
0004	010	76	78	45	46	72	50	47
00048	010	21	10	11	23	19	12	8
0005	010	48	44	22	36	46	36	31
0006	010	110	104	52	49	62	52	69
0007	010	115	78	90	69	96	57	98
0008	020	90	52	52	42	43	46	79
0009	020	88	59	40	48	32	60	56
0010	020	66	54	52	40	49	53	43
0011	020	107	62	68	31	52	54	58
0012	035	147	75	73	59	57	67	52
0013	035	112	71	50	42	62	62	73
0014	045	82	152	56	55	55	56	65
0015	045	54	566	40	33	42	39	64
00158	045	0	0	0	0	0	0	0
0016	045	129	82	55	58	53	59	51
0017	045	88	91	48	44	52	42	61
0018	045	81	45	53	42	38	36	28
0019	015	52	50	25	41	48	54	60
0020	015	98	74	67	40	51	55	54
0021	015	34	30	17	18	42	15	22
0022	015	105	93	67	49	91	90	74
0023	015	85	64	47	59	62	52	74
0024	015	152	100	93	68	98	84	58
0025	015	98	81	58	73	73	63	69
0026	015	52	81	49	42	57	70	83
0027	015	95	96	73	59	86	74	83
0027B	015	4	0	0	2	0	0	0
0028	015	41	41	32	43	52	50	71
0029	015	81	98	47	31	66	48	54
0030	015	114	76	54	67	49	60	56
0031	015	59	63	29	41	55	29	40
0032	015	118	75	45	61	58	60	47
0033	015	31	25	5	13	20	11	20
0034	015	147	95	77	64	88	80	61
0035	040	178	110	86	114	126	64	49
0036	040	227	99	95	127	151	95	52
0037	040	120	85	61	76	60	63	47
0038	040	85	60	36	23	52	31	33
0039	040	229	138	106	131	131	85	54
0040	040	160	106	97	86	91	53	67
0041	040	8	5	7	3	4	4	1
0042	025	7	10	6	1	3	4	5
0043	025	156	90	65	97	79	79	70
0044	025	24	14	8	12	9	8	15
0045	005	106	97	60	50	60	58	54
0046	005	72	45	28	30	29	18	27

HARRISON COUNTY 033 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0047	005	13	5	4	6	14	6	9
0048	005	116	103	61	59	61	55	50
0049	005	76	54	49	60	49	38	46
0050	005	81	84	67	61	72	60	35
0051	005	94	99	74	71	84	72	67
0052	005	126	101	87	87	103	108	92
0053	005	1	6	3	0	0	0	2
0054	005	64	61	37	47	82	65	74
0055	005	64	27	42	35	33	29	46
0056	005	74	95	43	49	66	64	62
0057	005	98	117	71	63	69	87	78
0058	005	38	29	25	19	34	27	58
0059	005	34	74	47	37	59	48	86
0060	005	132	80	60	71	105	80	58
0061	005	75	83	43	42	55	48	107
0062	005	84	76	45	51	70	68	94
0063	005	93	89	46	59	69	59	68
0064	005	119	100	80	68	110	101	112
0065	005	100	61	64	54	58	37	60
0066	005	60	40	32	33	61	50	39
0067	005	123	82	65	88	85	63	59
0068	005	99	45	48	72	58	50	41
0069	050	32	19	13	17	28	19	23
0070	050	81	56	41	32	28	36	25
0071	050	93	70	48	50	52	72	64
0072	030	54	35	29	29	31	39	37
0073	030	121	83	50	53	55	48	52
0074	030	120	63	49	47	63	54	57
0075	030	63	26	18	30	26	21	33

MARION COUNTY 049 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	C25	86	86	54	65	91	60	108
0002	025	61	79	51	50	76	64	49
0003	C25	49	57	29	39	37	44	62
0004	C25	85	77	46	68	68	47	66
0005	C25	41	55	18	28	35	30	38
0006	C25	117	76	70	68	61	43	79
0007	C2C	137	98	60	77	87	112	134
0008	020	29	14	19	12	23	26	30
0009	020	69	93	46	62	73	79	114
0010	C20	121	129	77	81	97	68	75
0011	020	104	77	56	52	64	62	100
0012	020	40	28	17	14	27	32	22
0013	C15	47	52	26	32	41	45	64
0014	015	45	44	28	33	38	37	42
0015	015	27	18	12	13	25	23	36
0016	C15	125	127	57	62	82	56	55
0017	C15	119	91	59	63	56	53	73
0018	015	118	101	64	63	83	70	58
0019	C15	106	83	57	71	82	82	78
0020	015	123	113	61	81	96	79	61
0021	015	39	38	26	33	43	35	57
0022	C05	134	132	103	102	90	94	118
0023	005	101	88	70	81	83	97	95
0024	005	91	89	72	57	91	100	93
0025	C05	60	79	55	48	83	81	101
0026	005	105	105	65	57	72	64	115
0027	005	50	73	35	39	49	52	114
0028	005	61	707	53	61	85	97	143
0029	C05	94	67	72	94	107	84	56
0030	005	115	102	70	93	127	135	82
0031	C05	103	116	43	107	118	109	128
0032	C05	67	61	51	41	87	73	74
0033	005	35	98	46	37	78	74	143
0034	C05	62	108	50	40	60	73	146
0035	C05	8	21	13	20	22	25	62
0036	C05	93	64	44	28	53	53	66
0037	C05	82	78	43	50	78	51	89
0038	C05	86	81	64	70	59	71	65
0039	005	103	95	55	76	84	54	59
0040	C35	111	111	79	92	94	69	77
0041	C35	140	108	80	105	95	64	72
0042	035	144	119	104	97	84	85	72
0043	C30	95	105	71	98	116	93	77
0044	030	85	114	63	75	122	104	98
0045	030	57	87	40	61	74	72	89
0046	030	36	60	28	22	37	59	64
0047	C30	104	115	53	87	89	73	117
0048	C30	73	88	58	66	94	83	88
0049	C30	94	82	66	74	63	48	50
0050	C30	111	84	83	83	97	59	79
0051	030	163	121	124	117	123	94	83
0052	C3C	52	42	34	29	36	22	22
0053	030	79	63	64	60	59	56	81
0054	C10	38	33	28	41	45	17	13
0055	C10	100	100	81	86	113	85	78
0056	C10	51	56	27	41	42	44	56
0057	010	0	0	0	0	0	0	0
0058	010	142	88	113	96	84	55	80
0059	C10	87	84	57	66	43	31	35
0060	C10	109	72	51	64	63	54	73

MARION COUNTY 049 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
C001	C25	93	91	56	46	82	53	58
0002	C25	76	77	55	33	66	59	66
C003	C25	59	43	33	25	43	30	41
CCC4	C25	88	76	38	58	68	49	61
0005	025	39	32	29	18	28	25	31
0006	C25	91	84	54	66	59	57	54
CCC7	C20	105	80	60	65	65	81	113
C008	020	20	24	14	11	15	24	16
0009	C2C	83	63	36	57	73	51	82
0010	C2C	148	101	67	73	88	80	72
0011	020	95	62	56	47	55	71	91
C012	C20	44	34	20	12	16	36	49
0013	C15	36	53	25	24	30	36	39
0014	C15	62	34	18	34	29	35	28
0015	C15	18	24	10	9	19	13	19
0016	C15	115	114	54	52	78	69	49
0017	C15	116	75	60	59	53	49	68
0018	C15	135	121	52	65	71	73	60
C019	C15	92	90	47	51	79	76	87
0020	C15	117	101	67	61	91	81	63
0021	C15	29	41	27	23	35	25	48
0022	CC5	112	117	96	75	104	75	98
0023	005	87	78	61	67	77	56	69
0024	005	105	90	53	52	84	77	90
0025	CC5	71	113	36	28	52	63	81
0026	005	91	139	59	48	58	48	55
0027	CC5	43	83	25	28	35	37	44
0028	CC5	73	427	66	48	57	71	68
0029	C05	107	92	56	86	83	76	52
0030	005	120	105	52	73	119	96	75
0031	CC5	102	87	44	75	96	84	104
0032	C05	65	57	55	31	57	55	43
0033	C05	43	83	43	26	39	56	77
0034	CC5	65	120	43	33	38	28	67
0035	CC5	11	45	25	16	32	31	70
0036	C05	83	57	36	30	33	30	67
C037	CC5	72	78	37	37	54	52	80
0038	CC5	111	75	60	63	54	71	62
0039	C05	91	98	56	56	77	59	51
C040	C35	119	118	68	73	93	54	55
0041	C35	176	117	88	81	91	67	60
0042	C35	165	117	107	94	77	77	72
C043	C30	103	105	66	81	94	78	52
0044	030	85	121	52	63	99	75	63
0045	030	65	74	47	42	56	57	65
0046	C30	43	50	23	21	32	37	44
0047	030	97	104	51	57	69	62	68
0048	030	83	76	73	58	65	57	71
0049	C30	114	74	58	62	66	39	23
0050	C30	143	81	72	75	99	64	65
0051	030	135	133	122	92	120	99	66
0052	C3C	42	31	35	36	24	27	17
0053	C30	118	65	54	58	66	58	65
0054	C10	43	34	35	23	48	21	9
C055	C1C	109	102	70	73	103	77	61
0056	C10	57	61	25	31	41	34	32
0057	010	0	0	0	0	0	0	0
0058	C1C	141	101	98	95	93	54	57
0059	C10	97	86	52	56	63	30	27
0060	010	119	98	42	64	78	57	55

MONONGALIA COUNTY 061 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	035	87	84	69	57	65	45	47
0002	035	125	108	111	83	73	57	41
0003	035	117	91	98	67	56	54	64
0004	035	83	140	63	66	48	50	41
0005	030	94	134	78	84	84	70	68
0006	030	74	78	50	49	56	54	53
0007	030	71	72	34	57	72	45	69
0008	030	87	100	66	55	63	48	67
0009	030	33	107	36	25	38	59	92
0010	030	47	82	28	27	41	51	48
0011	030	58	72	45	63	59	47	59
0012	030	99	96	82	65	63	37	40
0013	030	60	72	40	41	55	46	60
0014	030	71	78	62	56	58	43	55
0015	030	45	55	37	46	43	28	43
0016	030	29	79	26	37	42	48	92
0017	030	58	112	56	55	49	72	105
0018	030	15	89	21	14	35	34	54
0019	030	19	140	23	15	41	54	96
0020	030	20	118	21	20	24	36	50
0021	030	27	103	36	21	37	35	53
0022	030	48	1095	79	40	31	43	77
0023	030	13	734	20	12	18	31	46
0024	030	22	208	39	17	36	41	76
0025	030	60	138	43	52	52	41	86
0026	030	65	64	52	43	44	22	41
0027	030	32	339	69	40	77	41	76
0028	030	54	1093	99	41	41	57	91
0029	030	94	61	47	61	72	57	48
0030	030	60	58	32	46	55	48	49
0031	030	269	191	216	208	157	72	60
0032	030	33	158	87	22	40	19	19
0033	030	110	248	168	76	66	55	48
0034	030	66	186	101	59	61	49	59
0035	030	113	129	86	86	75	60	52
0035B	030	146	136	135	79	85	48	53
0036	030	0	0	0	0	0	0	0
0037	030	137	125	74	77	60	53	48
0038	020	110	99	78	64	50	64	56
0039	020	88	62	61	60	61	66	49
0040	020	101	79	58	63	61	63	44
0041	025	81	121	52	69	99	89	89
0042	025	91	123	70	82	88	60	77
0043	025	121	143	89	106	90	73	83
0044	025	130	111	91	81	69	44	39
0045	025	62	96	58	59	65	69	36
0046	025	53	69	33	30	48	28	31
0047	025	99	92	43	68	71	56	44
0048	025	86	62	52	31	73	42	59
0049	025	79	73	39	49	48	43	42
0050	010	4	7	0	4	3	5	2
0051	010	32	26	5	14	33	19	18
0052	010	87	89	62	46	43	51	55
0053	010	69	50	46	52	44	44	53
0054	010	121	104	88	63	65	58	64
0055	015	24	28	13	7	12	21	22
0056	015	96	91	64	69	53	54	46
0057	015	84	74	60	52	50	48	49
0058	015	59	57	41	36	34	34	41
0059	005	55	35	46	31	33	29	47
0060	005	49	43	31	33	38	37	49

MONONGALIA COUNTY 061 COUNT ONE DATA QUESTIONS 20

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0001	035	96	97	53	59	57	48	40
0002	035	164	89	112	74	85	55	38
0003	035	136	97	102	69	62	48	56
0004	035	71	124	82	59	38	43	51
0005	030	120	130	92	69	84	58	53
0006	030	69	69	56	37	55	22	41
0007	030	60	90	35	36	60	39	54
0008	030	85	102	65	50	61	34	49
0009	030	43	111	44	27	25	40	46
0010	030	38	101	47	17	31	31	40
0011	030	93	72	42	47	56	40	46
0012	030	113	97	70	56	64	35	34
0013	030	51	61	35	41	43	31	36
0014	030	62	68	61	47	47	41	30
0015	030	47	44	27	32	34	28	22
0016	030	35	62	30	19	38	37	49
0017	030	73	111	57	36	45	48	51
0018	030	12	98	34	13	18	18	21
0019	030	12	364	38	16	13	15	36
0020	030	25	232	40	19	22	21	28
0021	030	25	195	44	15	24	23	24
0022	030	52	1021	133	43	27	29	36
0023	030	18	382	45	12	15	19	31
0024	030	35	1110	78	12	23	29	36
0025	030	62	220	54	31	46	32	39
0026	030	65	69	34	41	51	23	21
0027	030	42	337	68	42	59	32	52
0028	030	55	1473	173	38	43	42	70
0029	030	100	80	36	53	70	50	51
0030	030	49	67	26	35	52	35	32
0031	030	315	205	162	196	169	77	30
0032	030	19	181	102	25	32	14	18
0033	030	117	274	209	80	55	45	36
0034	030	110	208	127	57	50	46	46
0035	030	137	110	99	83	73	52	44
0035B	030	147	127	119	76	71	55	60
0036	030	1	259	2	0	0	0	0
0037	030	136	108	73	65	72	45	53
0038	020	105	100	73	69	58	45	70
0039	020	77	76	49	59	61	49	63
0040	020	100	91	66	61	59	58	60
0041	025	73	139	54	46	89	52	66
0042	025	97	138	71	63	80	60	51
0043	025	110	130	80	91	86	52	56
0044	025	113	96	96	74	64	41	40
0045	025	89	86	68	52	57	40	52
0046	025	52	58	43	37	31	31	34
0047	025	87	115	46	46	68	61	54
0048	025	97	56	38	43	62	48	54
0049	025	85	57	34	39	50	38	39
0050	010	3	3	3	5	1	4	4
0051	010	26	29	9	13	23	17	32
0052	010	112	67	42	54	40	47	60
0053	010	73	62	37	54	50	24	43
0054	010	120	93	75	54	65	54	71
0055	015	27	24	15	8	15	14	14
0056	015	132	84	59	62	52	54	56
0057	015	114	76	62	45	49	46	50
0058	015	74	62	42	42	29	42	43
0059	005	66	48	41	37	31	27	34
0060	005	62	65	36	31	30	37	41

PRESTON COUNTY C77 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
0001	C05	2	5	2	6	5	5	10
0002	005	17	11	15	7	9	9	27
0003	C05	94	60	55	47	50	56	36
0004	C05	38	35	22	32	30	32	42
0005	C40	76	90	34	60	49	52	63
0006	C40	27	21	25	22	29	20	34
0007	C40	158	107	82	73	80	49	65
0008	040	174	125	76	84	75	69	54
0009	C40	86	75	42	69	59	37	37
0010	020	82	52	47	46	40	45	35
0011	020	79	57	31	51	36	39	49
0012	C25	28	35	12	17	24	15	23
0013	C25	51	56	33	36	64	40	75
0014	025	83	69	39	48	36	34	70
0015	025	11	7	4	5	6	5	8
0016	C25	53	41	24	36	37	28	36
0017	025	69	45	34	23	33	32	37
0018	025	78	74	34	41	59	60	174
0019	010	101	90	75	68	84	71	61
0020	C10	111	132	84	72	95	81	117
0021	C10	26	20	18	16	28	27	45
0022	010	94	55	49	53	40	36	32
0023	010	153	120	100	71	79	52	56
0024	C10	83	74	46	36	61	25	30
0025	C15	49	43	22	28	23	29	40
0026	C15	90	73	47	43	56	44	27
0027	015	46	39	26	16	24	19	30
0028	C30	71	57	31	33	39	54	89
0029	030	53	43	34	27	43	35	41
0030	C30	141	98	72	61	70	62	86
0031	C30	118	72	55	51	46	45	49
0032	C35	0	0	0	0	0	0	0
0033	035	133	59	62	52	59	51	85
0034	C35	83	52	43	43	62	43	58

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
0001	C05	6	6	3	4	4	5	10
0002	005	27	16	9	10	6	11	17
0003	C05	106	85	50	44	49	59	54
0004	C05	42	39	21	23	31	37	32
0005	040	69	82	32	45	54	34	48
0006	C40	35	24	27	17	21	17	22
0007	C40	128	92	73	76	66	50	66
0008	040	153	118	78	91	84	59	61
0009	C40	91	72	49	52	60	44	41
0010	C20	88	66	46	45	52	36	42
0011	020	85	73	33	40	44	50	32
0012	C25	27	24	21	13	20	14	19
0013	C25	47	43	29	32	42	34	59
0014	C25	79	63	35	37	41	37	48
0015	025	8	13	5	1	7	6	4
0016	C25	61	37	19	38	34	29	37
0017	C25	79	40	32	25	41	27	50
0018	025	89	75	38	30	56	56	103
0019	C10	125	76	58	64	83	55	46
0020	C10	128	107	94	61	78	60	75
0021	C10	28	28	17	15	22	24	37
0022	010	112	64	45	45	41	32	41
0023	C10	167	123	93	81	75	62	61
0024	010	105	76	43	38	41	40	33
0025	C15	56	37	16	25	18	20	24
0026	C15	84	55	47	45	47	52	44
0027	C15	43	34	28	21	25	25	28
0028	C30	54	51	32	37	35	43	48
0029	C30	63	47	40	25	30	40	43
0030	030	152	93	66	59	74	65	73
0031	C30	98	94	53	45	59	55	54
0032	C35	0	0	0	0	0	0	0
0033	C35	105	72	44	56	54	54	60
0034	C35	75	65	45	33	47	48	62

TAYLOR COUNTY C91 COUNT ONE DATA QUESTION 20 FEMALE

E D NUMBER	M C D NUMBER	FEMALE AGE 5-14	FEMALE AGE 15-24	FEMALE AGE 25-34	FEMALE AGE 35-44	FEMALE AGE 45-54	FEMALE AGE 55-64	FEMALE AGE 65 & OVER
C001	C15	78	61	46	57	53	55	86
00018	C15	7	10	3	4	5	3	5
C002	C15	61	55	45	43	43	32	44
C002B	C15	71	52	40	47	57	57	69
0003	C15	24	17	9	17	16	7	16
0003B	C15	13	8	8	7	6	17	10
C004	C15	56	32	31	30	22	23	24
0005	C05	44	54	42	49	37	36	41
C006	C05	77	60	49	53	44	55	51
C007	C20	43	29	34	19	23	30	23
0008	020	47	38	31	24	29	40	50
0009	C20	73	40	30	22	47	29	44
0010	C10	102	82	55	44	58	55	69
0011	C10	60	43	29	38	36	40	56
0011B	010	1	5	4	0	0	3	0
0012	C25	81	73	54	55	71	78	105
0013	025	66	65	33	52	48	36	99
0014	C25	60	62	31	47	57	56	93
0015	C25	83	73	42	58	64	50	102
C016	C25	49	52	45	35	56	70	115
C017	C30	77	58	40	37	40	25	47
0017B	C30	19	15	10	15	11	13	13
0018	C30	39	27	15	28	19	30	25

E D NUMBER	M C D NUMBER	MALE AGE 5-14	MALE AGE 15-24	MALE AGE 25-34	MALE AGE 35-44	MALE AGE 45-54	MALE AGE 55-64	MALE AGE 65 & OVER
C001	C15	62	65	55	46	57	26	57
00018	015	3	11	3	3	6	2	6
CC02	C15	69	59	31	46	34	44	50
C002B	C15	69	39	29	45	51	45	38
0003	015	23	11	8	15	16	13	16
C003B	C15	8	5	7	3	8	13	9
C004	C15	69	25	30	30	11	26	24
0005	005	60	48	50	34	37	27	50
0006	005	60	62	56	47	50	54	43
0007	C20	45	32	36	25	18	21	25
0008	020	57	50	22	27	31	29	43
0009	020	54	43	32	24	34	35	41
0010	C10	156	215	71	41	49	57	48
0011	C10	41	43	34	32	29	38	53
0011B	C10	16	4	0	0	2	7	2
0012	C25	94	62	60	43	59	60	72
0013	C25	55	57	25	31	46	40	58
0014	025	78	63	28	32	43	46	45
0015	C25	78	67	29	60	46	44	62
0016	025	56	54	42	37	52	50	62
0017	C30	61	54	34	35	45	33	40
C017B	C30	18	14	6	19	10	9	14
0018	C30	33	30	20	30	21	21	32

GODDRIDGE COLNTY 017 COUNT ONE DATA QUESTIONS 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	025	238	239	511	237	117
0002	C25	214	208	446	174	122
C003	C15	329	310	693	198	142
C004	C15	142	153	323	114	68
0005	C40	209	220	458	174	132
0006	040	272	350	683	293	213
0007	040	307	281	630	356	147
0008	040	197	201	437	169	111
0009	C05	374	410	850	274	162
0010	035	108	93	215	084	55
0011	010	82	72	156	079	44
0012	C30	146	148	313	170	95
0013	020	311	304	674	210	140

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	010	373	407	845	287	224
0002	010	409	469	931	351	307
0003	010	180	217	424	167	138
0004	010	414	493	988	366	295
00048	010	104	110	233	83	80
0005	010	263	278	595	219	138
0006	010	498	490	1078	344	256
0007	010	603	646	1374	480	346
0008	020	404	477	957	371	279
0009	020	383	389	839	278	173
0010	020	357	422	843	282	214
0011	020	432	446	971	324	212
0012	035	530	505	1148	346	249
0013	035	472	493	1034	337	231
0014	045	521	506	1091	435	327
0015	045	838	626	1506	350	272
00158	045	0	0			0
0016	045	487	487	1067	361	285
0017	045	426	543	1040	332	264
0018	045	323	335	723	317	201
0019	015	330	379	756	275	198
0020	015	439	448	969	319	226
0021	015	178	225	431	139	107
0022	015	569	678	1329	501	430
0023	015	443	546	1055	379	332
0024	015	653	736	1505	495	428
0025	015	515	642	1254	469	403
0026	015	434	598	1091	459	376
0027	015	566	691	1352	533	426
00278	015	6	4	12	52	0
0028	015	330	366	753	364	207
0029	015	425	498	1002	342	279
0030	015	476	481	1026	324	246
0031	015	316	334	718	219	164
0032	015	464	447	1001	326	263
0033	015	125	130	269	92	59
0034	015	612	638	1371	423	331
0035	040	727	806	1645	537	491
0036	040	846	988	1963	621	599
0037	040	512	568	1169	407	367
0038	040	320	341	724	219	167
0039	040	874	856	1863	585	475
0040	040	660	682	1478	479	380
0041	040	32	33	75	30	17
0042	025	36	33	78	25	16
0043	025	636	645	1379	472	368
0044	025	90	87	190	70	50
0045	005	485	490	1074	340	251
0046	005	249	241	544	154	103

HARRISON COUNTY 033 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0047	005	57	70	142	48	39
0048	005	505	533	1100	367	279
0049	005	372	411	850	290	257
0050	005	460	506	1045	363	329
0051	005	561	666	1334	483	426
0052	005	704	839	1658	618	587
0053	005	12	15	32	61	12
0054	005	430	495	980	370	348
0055	005	276	358	684	266	255
0056	005	453	562	1081	446	363
0057	005	583	712	1381	595	490
0058	005	230	400	664	330	278
0059	005	385	478	905	500	403
0060	005	586	662	1339	474	431
0061	005	453	611	1124	564	382
0062	005	488	653	1205	481	409
0063	005	483	546	1099	414	338
0064	005	690	824	1615	665	579
0065	005	434	511	1024	373	306
0066	005	315	356	720	260	243
0067	005	565	602	1269	419	352
0068	005	413	476	962	304	267
0069	050	151	185	356	132	111
0070	050	299	272	627	225	153
0071	050	449	495	1034	342	265
0072	030	254	272	571	198	154
0073	030	462	457	1000	318	217
0074	030	453	460	1003	330	236
0075	030	217	201	461	145	104

MARION COUNTY 049 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	025	479	550	1108	406	315
0002	025	432	430	946	343	279
0003	025	274	317	640	244	208
0004	025	438	457	961	333	268
0005	025	202	245	502	179	132
0006	025	465	514	1076	384	297
0007	020	569	705	1380	538	423
0008	020	124	153	306	115	87
0009	020	445	536	1061	409	350
0010	020	629	648	1391	451	330
0011	020	477	515	1067	394	289
0012	020	211	180	436	150	82
0013	015	243	307	595	236	196
0014	015	240	267	552	186	154
0015	015	112	154	288	117	98
0016	015	531	564	1213	373	268
0017	015	480	514	1090	361	270
0018	015	577	557	1253	428	260
0019	015	522	559	1175	398	332
0020	015	581	614	1278	423	353
0021	015	228	271	540	166	132
0022	005	677	773	1596	579	507
0023	005	495	615	1192	434	400
0024	005	551	593	1256	470	366
0025	005	444	507	1032	448	322
0026	005	498	583	1149	474	381
0027	005	295	412	748	323	277
0028	005	815	1207	2080	524	463
0029	005	552	574	1203	432	414
0030	005	640	724	1433	515	492
0031	005	592	724	1387	494	472
0032	005	363	454	867	327	276
0033	005	367	511	938	472	385
0034	005	394	539	974	463	364
0035	005	230	171	414	223	131
0036	005	336	401	828	318	188
0037	005	410	471	959	368	262
0038	005	496	496	1092	392	278
0039	005	478	526	1079	374	328
0040	035	580	633	1319	455	398
0041	035	680	664	1481	477	392
0042	035	709	705	1552	504	426
0043	030	579	655	1323	512	428
0044	030	558	661	1298	478	430
0045	030	406	480	942	347	324
0046	030	250	306	594	259	197
0047	030	508	638	1229	454	374
0048	030	483	550	1109	436	370
0049	030	436	477	1008	327	264
0050	030	599	596	1311	456	392
0051	030	767	825	1732	609	534
0052	030	212	237	495	181	143
0053	030	484	464	1023	409	277
0054	010	213	215	469	154	148
0055	010	595	643	1350	465	437
0056	010	281	317	642	234	182
0057	010	0	0	000	000	0
0058	010	639	658	1422	560	400
0059	010	411	403	894	280	241
0060	010	513	486	1078	336	244

MONONGALIA COUNTY 061 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	035	450	454	966	371	247
0002	035	617	598	1363	455	343
0003	035	570	547	1236	422	318
0004	035	468	491	1048	405	327
0005	030	606	612	1312	463	420
0006	030	349	414	843	297	238
0007	030	374	420	854	316	262
0008	030	446	486	1013	365	315
0009	030	336	390	784	329	273
0010	030	305	324	685	273	227
0011	030	396	403	866	315	258
0012	030	469	482	1023	322	301
0013	030	298	374	722	261	243
0014	030	356	423	842	295	256
0015	030	234	297	565	220	185
0016	030	270	353	652	277	243
0017	030	421	507	964	393	349
0018	030	214	262	507	259	205
0019	030	494	388	913	360	275
0020	030	387	289	716	334	274
0021	030	350	312	688	307	233
0022	030	1341	1413	2896	507	424
0023	030	522	874	1424	342	258
0024	030	1323	439	1798	513	405
0025	030	484	473	1007	404	333
0026	030	304	331	675	211	198
0027	030	632	674	1372	393	335
0028	030	1894	1476	3448	616	528
0029	030	440	440	932	357	290
0030	030	296	348	677	228	218
0031	030	1154	1173	2561	758	723
0032	030	391	378	882	353	322
0033	030	816	771	1767	718	623
0034	030	644	581	1375	530	422
0035	030	598	601	1325	435	355
00358	030	655	682	1510	480	377
0036	030	262	0	262		0
0037	030	552	574	1234	363	236
0038	020	520	521	1143	405	241
0039	020	434	447	949	322	258
0040	020	495	469	1049	347	243
0041	025	519	600	1194	427	394
0042	025	560	591	1251	452	386
0043	025	605	705	1423	492	428
0044	025	524	565	1218	383	350
0045	025	444	445	971	318	265
0046	025	286	292	636	213	160
0047	025	477	473	1042	342	215
0048	025	398	405	885	309	195
0049	025	342	373	774	272	183
0050	010	23	25	56	26	10
0051	010	149	147	322	133	63
0052	010	422	433	936	321	190
0053	010	343	358	754	298	168
0054	010	532	563	1218	384	239
0055	015	117	127	264	104	76
0056	015	499	473	1059	348	249
0057	015	442	417	919	322	216
0058	015	334	302	704	245	187
0059	005	284	276	614	215	166
0060	005	302	280	622	212	168

PRESTON COUNTY 077 COUNT ONE DATA QUESTION 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	C05	38	35	082	032	24
0002	CC5	96	95	209	073	59
0003	CC5	447	398	920	331	205
0004	005	225	231	488	260	123
0005	040	364	424	868	299	217
0006	C4C	163	178	379	147	120
0007	C40	551	614	1290	383	299
0008	C40	644	657	1441	423	265
0009	C4C	409	405	903	303	180
0010	020	375	347	791	258	176
0011	C20	357	342	768	270	162
0012	C25	138	154	319	118	71
0013	C25	286	355	702	267	230
0014	025	340	379	772	267	195
0015	C25	44	46	104	033	23
0016	C25	255	255	548	243	128
0017	C25	294	273	624	220	129
0018	C25	447	520	1042	257	154
0019	010	507	550	1136	385	346
0020	010	603	692	1414	532	415
0021	C10	171	180	369	164	112
0022	010	380	359	821	276	169
0023	010	662	631	1442	438	280
0024	C10	376	355	811	240	141
0025	015	196	234	457	159	107
0026	C15	374	380	809	275	164
0027	C15	204	200	457	161	82
0028	030	300	374	725	276	185
0029	03C	293	276	626	220	145
0030	C30	582	590	1309	398	252
0031	030	458	436	988	326	173
0032	C35	C	0	000	000	0
0033	C35	445	501	1029	321	213
0034	C35	375	384	812	316	196

TAYLOR COUNTY 091 COUNT ONE DATA QUESTIONS 22, TOT POP & HOUSING, & 18

E D NUMBER	M C D NUMBER	TOTAL NUMBER MALE	TOTAL NUMBER FEMALE	TOTAL E D POP	TOTAL E D HOUSING	TELEPHONE AVAILABLE
0001	015	368	436	864	341	285
0001B	C15	34	37	072	031	24
0002	C15	333	323	701	248	185
0002B	015	316	393	759	291	261
0003	C15	102	106	227	087	49
0003B	C15	53	69	133	057	44
0004	015	215	218	497	163	110
0005	C05	306	303	676	262	168
0006	C05	372	389	832	310	202
0007	020	202	201	458	155	111
0008	C20	259	266	596	205	127
0009	C20	263	285	596	184	120
0010	010	637	465	1189	338	220
0011	C10	270	302	618	250	143
0011B	C1C	31	13	044	011	6
0012	C25	450	517	1053	412	315
0013	025	312	399	759	278	214
0014	C25	335	406	793	309	250
0015	C25	386	472	913	358	307
0016	C25	353	422	838	381	245
0017	C3C	302	328	686	276	171
0017B	C30	90	96	205	067	55
0018	C3C	187	183	399	139	90

DODDRIDGE COUNTY 017 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	[illegible]	[illegible]	75	[illegible]	[illegible]	83	4	[illegible]	[illegible]	47	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]	60	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	100	[illegible]	[illegible]	111	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	31	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	[illegible]	[illegible]

HARRISON COUNTY 033 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	15	5	73	101	93	127	69	14	141	64	6
2	15	4	43	84	84	236	52	47	196	103	0
3	15	0	5	34	26	102	20	61	96	47	0
4	15	6	99	158	144	203	47	20	136	135	10
2224	15	0	15	18	37	23	24	9	37	37	0
5	15	0	49	58	90	197	15	22	106	46	19
6	15	33	115	148	126	131	35	15	137	110	29
7	15	27	157	228	191	168	40	20	202	75	8
8	25	17	142	63	85	254	46	36	196	77	0
9	25	0	85	159	114	87	16	27	118	129	7
10	25	12	99	108	112	83	38	18	129	76	0
11	25	4	90	117	172	88	24	16	149	57	0
12	35	0	110	115	112	186	55	31	152	128	13
13	35	25	133	205	113	133	4	10	170	63	15
14	45	0	97	167	120	192	49	99	234	70	13
15	45	5	84	88	72	103	80	64	157	54	8
16	45	3	52	124	118	279	53	41	152	104	47
17	45	4	90	86	101	164	33	73	147	55	21
18	45	0	24	91	51	84	33	72	135	81	0
19	15	13	145	128	64	127	4	8	125	50	0
20	15	23	134	65	102	137	17	11	133	43	0
21	15	0	55	53	106	53	0	0	70	27	0
22	15	23	95	149	167	359	68	45	288	121	23
23	15	0	82	82	122	346	80	5	212	88	24
24	15	39	143	90	181	363	60	32	241	112	8
25	15	6	162	107	118	301	31	23	231	69	7
26	15	0	102	101	116	177	63	69	257	43	0
27	15	48	89	135	161	289	44	29	344	43	0
2027	15	0	0	0	0	0	0	0	0	0	0
28	15	14	107	66	94	97	35	17	87	7	0
29	15	9	71	77	140	214	97	55	207	32	8
30	15	0	94	112	142	163	23	15	167	48	6
31	15	19	90	85	77	116	10	0	113	27	11
32	15	0	141	132	68	191	22	30	194	88	7
33	15	0	41	22	34	35	14	15	34	22	5

HARRISON COUNTY 033 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
34	15	0	103	131	157	251	49	23	229	82	13
35	45	7	43	94	132	345	149	135	253	172	11
36	45	5	31	59	79	435	234	312	289	229	37
37	45	11	49	52	84	316	93	109	190	169	25
38	45	3	83	76	143	54	14	9	143	30	0
39	45	4	130	55	111	343	163	157	261	189	17
40	45	15	73	121	164	296	96	69	235	100	71
41	45	0	0	12	17	14	0	0	0	0	0
42	25	0	15	15	0	15	0	0	0	0	0
43	25	19	113	129	161	257	98	50	238	127	29
44	25	0	19	25	17	22	15	0	46	0	0
45	5	0	154	149	53	101	19	5	167	15	0
46	5	23	117	42	65	66	0	0	93	6	0
47	5	0	21	20	10	46	6	0	53	5	0
48	5	9	100	98	191	156	39	16	172	59	0
49	5	0	42	73	177	219	24	8	160	81	5
50	5	0	57	117	148	217	72	21	212	85	14
51	5	0	56	135	168	348	89	18	291	111	7
52	5	0	52	134	113	411	173	191	355	140	14
53	5	0	0	0	5	5	5	0	0	0	0
54	5	0	62	66	140	176	163	79	191	79	21
55	5	0	23	75	32	152	97	78	115	101	5
56	5	0	57	113	138	222	100	19	254	42	0
57	5	17	97	135	183	311	95	90	270	92	7
58	5	0	63	45	57	220	58	68	118	21	0
59	5	0	59	107	86	245	82	53	210	29	8
60	5	0	43	84	133	365	123	65	295	90	7
61	5	0	66	110	114	198	75	56	142	55	0
62	5	6	63	90	101	324	113	71	220	70	7
63	5	5	79	42	154	241	78	53	182	84	0
64	5	4	81	153	173	439	142	94	363	152	22
65	5	23	124	97	121	236	28	10	191	55	6
66	5	5	48	29	119	203	79	35	134	65	11
67	5	11	88	128	160	305	45	26	243	106	6
68	5	0	34	54	103	167	111	77	92	153	26
69	50	0	29	36	56	62	25	12	34	52	8
70	50	0	38	62	70	93	15	17	104	34	15
71	50	0	106	173	63	224	40	57	171	128	9
72	30	0	38	83	73	113	38	55	101	71	13
73	30	0	91	137	103	154	27	4	162	53	0
74	30	12	178	92	53	127	67	12	165	69	12
75	30	0	31	41	59	81	30	16	84	24	17

MARION COUNTY 049 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	25	13	171	98	126	250	42	4	222	30	0
2	25	17	154	106	86	211	7	12	156	93	14
3	25	0	81	84	50	124	29	21	122	59	8
4	25	4	110	177	86	184	17	5	164	57	12
5	25	0	63	62	54	73	0	5	132	10	0
6	25	0	63	154	102	222	15	26	166	142	4
7	20	0	138	140	136	402	58	28	245	111	20
8	20	4	42	63	41	52	0	0	44	27	0
9	20	0	73	100	112	210	73	42	187	111	0
10	20	0	213	158	140	182	24	4	196	69	7
11	20	0	138	224	123	195	39	6	179	71	23
12	20	0	69	72	79	25	0	5	57	28	7
13	15	0	80	59	98	122	21	10	122	50	8
14	15	14	95	44	27	54	5	27	51	48	0
15	15	4	49	46	42	37	14	11	66	15	7
16	15	9	137	135	118	159	36	5	175	94	23
17	15	10	147	136	93	142	47	4	152	86	5
18	15	21	205	176	155	171	3	5	216	122	15
19	15	7	173	152	150	213	23	10	169	130	7
20	15	15	85	148	164	226	44	14	205	102	13
21	15	23	31	67	70	96	18	26	39	41	0
22	5	27	138	137	179	313	125	84	347	111	14
23	5	22	98	106	100	337	69	21	240	96	6
24	5	45	110	176	158	213	34	45	194	121	14
25	5	27	90	132	96	183	54	24	165	60	7
26	5	21	55	79	47	213	69	148	262	62	13
27	5	0	43	40	71	147	77	91	117	60	0
28	5	4	55	63	94	214	142	138	255	136	0
29	5	0	36	87	113	200	153	193	235	164	7
30	5	0	40	51	90	261	234	223	216	248	0
31	5	16	65	107	121	277	178	186	288	137	31
32	5	0	59	84	116	211	30	83	169	56	19
33	5	11	84	94	79	202	114	82	221	45	0
34	5	0	32	79	98	236	32	64	141	37	20
35	5	24	63	68	55	88	14	20	91	6	0
36	5	20	157	37	117	60	5	0	108	29	0
37	5	4	193	82	66	133	21	22	131	14	12
38	5	0	83	179	177	150	54	10	178	112	0
39	5	0	70	83	81	243	50	119	222	48	26
40	35	0	59	130	192	266	79	20	254	135	13
41	35	25	108	197	177	224	67	27	308	98	0
42	35	0	128	230	79	344	46	35	220	152	33
43	35	0	93	193	121	348	67	11	279	89	16
44	35	0	59	130	167	333	122	49	310	73	22
45	30	0	70	151	73	190	58	53	151	77	12
46	30	15	54	79	62	99	22	5	104	23	0
47	30	4	107	132	117	271	45	54	226	38	20
48	30	30	68	131	128	262	44	26	250	91	0
49	30	0	85	105	117	237	53	20	123	143	14
50	30	11	35	115	80	320	31	47	212	117	20
51	30	19	40	192	202	473	149	101	327	154	21
52	30	5	43	47	20	127	34	0	97	33	0
53	30	5	51	183	101	211	55	21	253	61	7
54	10	7	28	10	50	171	10	19	83	64	6
55	10	8	115	108	139	292	75	105	241	148	26
56	10	3	68	68	82	131	31	7	95	47	7
57	10	0	0	0	0	0	0	0	0	0	0
58	10	5	41	173	92	279	133	78	293	97	5
59	10	0	30	60	114	193	59	29	111	95	5
60	10	22	207	133	115	148	12	13	151	75	14

MONONGALIA COUNTY 061 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	35	[illegible]	86	134	119	113	31	66	208	69	9
2	35	[illegible]	96	124	104	277	60	101	168	183	35
3	35	[illegible]	112	107	116	183	44	78	157	160	19
4	35	[illegible]	78	64	64	272	94	71	172	148	30
5	35	[illegible]	156	68	140	220	32	86	265	126	17
6	30	[illegible]	111	117	111	118	5	5	143	45	16
7	30	[illegible]	92	69	104	142	31	27	166	41	13
8	30	[illegible]	56	100	91	124	109	95	227	59	0
9	30	25	41	66	89	134	34	57	184	26	0
10	30	25	43	41	71	110	54	24	171	40	6
11	30	19	85	59	64	144	28	69	108	55	29
12	30	0	18	27	26	131	81	229	136	121	27
13	30	0	25	87	32	155	60	97	193	40	18
14	30	0	90	41	92	148	66	57	137	112	6
15	30	0	41	35	31	151	38	62	130	42	0
16	30	0	37	45	38	104	65	102	130	40	13
17	30	0	5	16	64	115	81	249	137	86	28
18	30	0	35	15	29	60	43	117	144	14	10
19	30	0	57	66	32	82	41	55	123	14	0
20	30	0	29	43	59	37	25	71	173	31	14
21	30	0	5	87	35	94	68	57	155	20	7
22	30	5	37	52	42	96	76	206	321	58	15
23	30	0	31	47	29	64	89	60	226	56	16
24	30	0	61	63	29	80	44	144	295	43	6
25	30	12	31	65	128	87	35	78	169	58	38
26	30	0	24	23	61	101	76	63	87	53	27
27	30	5	62	90	70	160	88	148	275	46	10
28	30	20	23	74	42	88	82	304	312	163	33
29	30	0	18	25	10	85	101	257	125	122	30
30	30	0	0	25	20	151	27	143	110	75	0
31	30	0	30	33	66	318	172	736	337	304	56
32	30	0	40	25	43	44	38	160	222	98	0
33	30	0	13	76	60	179	117	403	420	208	5
34	30	18	117	60	103	162	48	169	286	124	32
35	30	0	74	131	183	254	49	26	256	136	7
2035	30	0	152	139	137	157	56	102	250	120	30
36	30	0	1	6	0	0	0	0	0	0	0
37	30	6	191	127	176	123	10	0	184	78	21
38	20	0	200	139	146	103	11	5	166	85	36
39	20	3	60	154	176	151	22	22	202	42	6
40	20	15	134	159	160	82	41	21	208	47	17
41	25	11	28	109	78	226	113	135	205	98	27
42	25	0	98	109	121	212	93	90	239	97	19
43	25	10	114	193	140	248	67	61	253	126	31
44	25	13	35	121	89	304	57	98	214	99	6
45	25	12	134	89	157	131	11	19	173	29	18
46	25	14	120	68	73	67	24	0	153	6	0
47	25	0	102	159	160	53	20	8	150	40	31
48	25	0	116	138	118	114	34	44	187	42	0
49	25	0	76	80	84	123	27	18	102	57	0
50	10	0	12	0	3	4	0	0	0	0	0
51	10	0	76	32	25	11	0	0	47	0	0
52	10	4	128	106	144	100	15	15	153	55	7
53	10	14	119	60	94	111	25	4	71	66	10
54	10	25	198	141	127	151	35	15	225	43	17
55	15	0	9	9	41	85	24	0	62	40	0
56	15	0	57	170	110	182	48	44	160	90	27
57	15	0	108	116	161	102	23	0	128	48	15
58	15	0	36	40	90	140	0	12	115	65	0
59	5	0	23	87	90	151	19	8	135	45	0
60	5	0	61	64	61	74	53	24	105	52	0

PRESTON COUNTY 077 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	[illegible]	[illegible]	5	19	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]	[illegible]
[illegible]	[illegible]	5	23	45	16	47	5	[illegible]	44	7	6
[illegible]	[illegible]	[illegible]	[illegible]7	173	89	111	5	[illegible]	149	66	18
4	[illegible]	[illegible]	59	115	[illegible]	76	[illegible]	4	[illegible]4	[illegible]	[illegible]
5	[illegible]	[illegible]	78	91	[illegible]	147	9	[illegible]	140	81	5
6	[illegible]	[illegible]	24	33	[illegible]	67	[illegible]	[illegible]	[illegible]	58	9
7	[illegible]	14	[illegible]5	[illegible]4	92	[illegible]	[illegible]	4	145	123	18
[illegible]	[illegible]	20	123	[illegible]34	180	178	19	5	[illegible]3	[illegible]02	14
[illegible]	[illegible]	16	119	124	[illegible]6	116	5	[illegible]2	162	41	6
10	[illegible]	[illegible]	142	123	75	[illegible]3	4	[illegible]	[illegible]6	[illegible]3	6
11	[illegible]	5	94	[illegible]55	[illegible]8	77	6	4	147	[illegible]6	6
[illegible]2	[illegible]	[illegible]	33	54	36	23	18	[illegible]	[illegible]3	39	8
[illegible]3	[illegible]	7	49	[illegible]26	[illegible]9	[illegible]61	[illegible]4	[illegible]4	[illegible]46	41	7
[illegible]4	[illegible]	[illegible]	[illegible]32	74	69	92	[illegible]7	[illegible]8	[illegible]46	[illegible]0	0
15	[illegible]	[illegible]	6	15	[illegible]6	[illegible]1	6	[illegible]	[illegible]6	[illegible]	0
[illegible]6	[illegible]	[illegible]	31	78	[illegible]7	[illegible]8	[illegible]1	[illegible]0	[illegible]5	34	0
[illegible]7	[illegible]	7	[illegible]6	[illegible]9	[illegible]8	64	[illegible]7	[illegible]0	[illegible]6	[illegible]4	[illegible]
[illegible]8	[illegible]	[illegible]2	[illegible]43	[illegible]21	[illegible]7	[illegible]16	[illegible]	[illegible]4	[illegible]21	[illegible]9	0
[illegible]9	[illegible]	[illegible]	[illegible]30	[illegible]85	[illegible]2	[illegible]77	[illegible]94	[illegible]17	[illegible]15	[illegible]17	[illegible]9
[illegible]0	[illegible]	[illegible]	[illegible]34	[illegible]33	[illegible]17	[illegible]54	[illegible]72	[illegible]30	[illegible]97	[illegible]08	[illegible]9
[illegible]1	[illegible]	[illegible]	61	51	[illegible]6	62	[illegible]4	[illegible]	[illegible]3	[illegible]6	[illegible]5
[illegible]2	[illegible]	[illegible]	[illegible]80	[illegible]16	[illegible]9	[illegible]08	[illegible]5	[illegible]4	[illegible]42	[illegible]7	[illegible]0
[illegible]3	[illegible]	[illegible]5	[illegible]34	[illegible]51	[illegible]68	[illegible]48	[illegible]46	[illegible]4	[illegible]64	[illegible]81	[illegible]24
[illegible]4	[illegible]	[illegible]4	[illegible]98	[illegible]34	[illegible]3	[illegible]71	[illegible]9	[illegible]2	[illegible]33	[illegible]51	[illegible]0
[illegible]5	[illegible]	[illegible]	74	[illegible]81	[illegible]56	[illegible]78	[illegible]3	[illegible]9	[illegible]61	[illegible]38	[illegible]0
[illegible]6	[illegible]	[illegible]5	[illegible]07	[illegible]23	[illegible]0	[illegible]04	[illegible]0	[illegible]0	[illegible]38	[illegible]3	[illegible]5
[illegible]7	[illegible]	[illegible]8	[illegible]83	[illegible]67	[illegible]4[illegible]	[illegible]50	[illegible]2	[illegible]0	[illegible]35	[illegible]8	[illegible]1
[illegible]8	[illegible]	7	[illegible]8	[illegible]53	[illegible]78	[illegible]46	[illegible]41	[illegible]2	[illegible]36	[illegible]2	0
[illegible]9	[illegible]	[illegible]9	76	[illegible]00	[illegible]69	[illegible]83	[illegible]9	[illegible]5	[illegible]17	[illegible]8	[illegible]4
[illegible]0	[illegible]	[illegible]0	[illegible]83	[illegible]32	[illegible]37	[illegible]56	[illegible]0	[illegible]2	[illegible]28	[illegible]7	[illegible]0
[illegible]1	[illegible]	[illegible]3	[illegible]83	[illegible]58	[illegible]56	[illegible]91	[illegible]5	[illegible]0	[illegible]44	[illegible]9	[illegible]1
[illegible]2	[illegible]	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0	[illegible]0
[illegible]3	[illegible]	[illegible]5	[illegible]31	[illegible]70	[illegible]28	[illegible]78	[illegible]45	[illegible]9	[illegible]73	[illegible]48	[illegible]6
[illegible]4	[illegible]	[illegible]0	[illegible]72	[illegible]25	[illegible]51	[illegible]28	[illegible]26	[illegible]16	[illegible]47	[illegible]47	[illegible]0

TAYLOR COUNTY 091 COUNT FIVE DATA QUESTIONS 21 AND 17

ED NUMBER	MCD NUMBER	NO SCHOOL	ELEM 1-7	ELEM 8	HIGH S 1-3	HIGH S 4	COLLEGE 1-3	COLLEGE 4	ONE AUTO	TWO AUTOS	THREE AUTOS OR MORE
1	15	0	53	119	96	196	22	23	193	62	0
2001	15	0	0	20	6	14	5	4	0	0	0
2	15	4	88	121	35	154	18	4	91	45	11
2002	15	0	15	106	66	192	19	72	214	47	0
3	15	11	32	46	5	9	26	0	70	0	0
2003	15	0	5	25	4	24	9	7	40	0	0
4	15	6	34	49	73	102	21	7	82	47	0
5	5	5	53	129	54	129	37	15	125	24	8
6	5	10	77	31	52	169	78	14	157	72	6
7	25	5	95	26	38	96	11	0	78	17	0
8	25	10	37	76	65	54	24	17	102	24	7
9	25	35	33	91	37	49	10	9	101	19	0
10	10	6	138	122	113	152	37	18	164	56	6
11	10	16	121	85	53	32	20	20	100	39	0
2011	10	0	5	17	3	5	0	0	0	0	0
12	25	9	71	165	141	259	36	29	217	59	8
13	25	7	82	88	90	124	37	14	124	37	25
14	25	4	95	145	101	87	25	34	119	43	8
15	25	0	66	66	89	189	72	49	195	61	0
16	25	28	124	89	78	152	32	20	147	47	0
17	30	26	81	108	73	107	0	10	135	20	8
2017	30	0	46	33	3	32	0	14	28	25	0
18	30	0	38	63	23	64	12	9	75	5	0

DODDRIDGE COUNTY 017 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0-2,999	3,000-5,999	6,000-8,999	9,000-11,999	12,000-14,999	15,000 OR MORE
1	[illegible]	82	42	26	23	0	10
[illegible]	[illegible]	107	26	33	0	6	5
[illegible]	[illegible]	57	30	72	14	12	10
[illegible]	[illegible]	62	15	17	17	7	7
[illegible]	[illegible]	46	25	41	35	6	0
[illegible]	[illegible]	105	34	21	40	0	17
7	[illegible]	64	62	39	20	15	4
[illegible]	[illegible]	70	45	30	37	0	6
[illegible]	[illegible]	87	47	55	16	5	0
[illegible]	[illegible]	15	29	15	10	0	0
[illegible]	[illegible]	27	29	29	0	0	0
[illegible]	[illegible]	54	34	14	0	0	12
[illegible]	[illegible]	36	53	61	22	5	0

HARRISON COUNTY 033 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0- 2,999	3,000- 5,999	6,000- 8,999	9,000- 11,999	12,000- 14,999	15,000 OR MORE
1	10	99	42	86	14	4	27
2	10	91	46	78	57	30	28
3	10	53	35	40	14	20	18
4	10	62	102	91	63	39	23
204	10	20	5	14	24	14	5
5	10	84	32	54	35	9	11
6	10	110	50	88	55	27	6
7	10	101	65	127	66	21	5
8	20	96	52	79	38	50	28
9	20	72	52	85	63	15	12
10	20	90	60	43	23	10	7
11	20	127	95	109	23	5	0
12	35	89	77	105	46	25	14
13	35	136	64	98	24	4	16
14	45	168	106	81	74	12	8
15	45	764	143	73	24	9	0
16	45	53	96	117	29	43	13
17	45	136	50	68	10	31	24
18	45	34	47	53	33	8	36
19	15	57	125	64	22	4	0
20	15	80	69	80	31	12	5
21	15	30	23	45	16	5	17
22	15	109	134	156	81	31	15
23	15	79	83	113	81	27	9
24	15	106	59	126	112	61	21
25	15	135	135	93	55	40	16
26	15	136	95	67	90	37	15
27	15	157	104	125	40	41	40
2027	15	0	0	0	0	0	0
28	15	202	61	20	21	20	0
29	15	94	112	102	36	0	20
30	15	64	54	108	41	15	10
31	15	154	20	63	53	4	6
32	15	47	102	99	61	5	0
33	15	29	16	30	9	4	0

HARRISON COUNTY 033 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0- 2,999	3,000- 5,999	6,000- 8,999	9,000- 11,999	12,000- 14,999	15,000 OR MORE
34	15	87	99	107	34	42	10
35	40	112	67	112	125	72	61
36	40	73	96	83	121	63	189
37	40	83	54	67	102	39	50
38	40	44	73	53	14	12	25
39	40	73	48	96	102	72	144
40	40	53	73	131	72	46	50
41	40	14	6	6	0	0	0
42	40	9	5	15	0	0	0
43	25	129	97	122	80	26	22
44	25	42	16	9	0	0	6
45	5	122	78	57	61	3	0
46	5	54	47	35	12	0	0
47	5	15	0	6	14	15	0
48	5	81	90	72	92	18	5
49	5	49	57	79	56	28	28
50	5	47	49	119	97	31	22
51	5	69	68	166	97	40	35
52	5	113	122	137	82	79	87
53	5	5	5	5	0	0	0
54	5	66	71	92	99	21	42
55	5	78	21	95	44	39	21
56	5	113	116	108	35	28	27
57	5	135	175	143	82	42	27
58	5	71	43	71	32	23	34
59	5	163	122	78	45	21	39
60	5	75	97	135	63	72	32
61	5	191	100	93	27	26	30
62	5	119	130	115	46	36	10
63	5	85	65	72	76	42	31
64	5	186	101	142	91	65	115
65	5	91	117	73	41	31	16
66	5	58	17	44	72	25	51
67	5	66	120	57	114	27	31
68	5	42	41	56	51	31	76
69	50	43	33	22	21	20	5
70	50	77	47	47	10	17	10
71	50	81	81	87	53	26	17
72	30	12	83	37	31	21	8
73	30	68	96	96	33	4	0
74	30	131	100	44	50	7	11
75	30	50	24	35	23	7	0

MARION COUNTY 049 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0-2,999	3,000-5,999	6,000-8,999	9,000-11,999	12,000-14,999	15,000 OR MORE
1	25	136	48	67	93	24	11
2	25	43	95	105	51	24	10
3	25	72	38	40	35	9	35
4	25	105	49	40	64	20	17
5	25	55	25	70	12	2	3
6	25	71	53	71	70	36	28
7	20	176	125	77	78	42	23
8	20	85	24	13	13	4	5
9	20	93	102	110	47	5	27
10	20	149	109	106	32	21	14
11	20	165	92	87	39	0	0
12	20	45	37	32	21	7	0
13	15	68	66	80	28	6	4
14	15	60	43	26	32	9	10
15	15	69	0	11	33	9	4
16	15	63	110	100	77	2	5
17	15	55	117	89	45	4	11
18	15	95	64	78	120	30	15
19	15	54	73	83	99	55	11
20	15	63	44	131	96	41	17
21	15	56	37	6	31	6	11
22	5	126	107	175	107	71	35
23	5	84	71	169	73	26	19
24	5	102	124	81	75	41	26
25	5	152	110	108	26	22	19
26	5	192	104	93	30	15	49
27	5	135	87	39	41	5	35
28	5	242	104	114	43	67	55
29	5	74	53	60	113	72	82
30	5	89	57	67	103	70	134
31	5	75	67	99	116	47	89
32	5	64	64	89	51	20	30
33	5	174	122	83	41	26	26
34	5	244	109	92	22	21	28
35	5	160	54	17	10	10	6
36	5	159	76	36	0	10	0
37	5	156	103	53	15	19	5
38	5	100	70	88	58	38	15
39	5	76	41	97	56	59	47
40	35	103	99	100	91	41	32
41	35	152	87	128	96	17	4
42	35	81	94	145	85	34	51
43	30	72	95	149	72	35	56
44	30	93	113	79	98	52	57
45	30	102	83	85	49	28	14
46	30	118	61	44	14	4	11
47	30	147	90	91	67	33	16
48	30	121	82	90	43	42	26
49	30	89	86	97	39	26	22
50	30	65	79	92	83	70	21
51	30	70	117	140	131	73	64
52	30	30	15	49	54	6	5
53	30	27	118	150	31	16	11
54	10	23	12	40	30	34	21
55	10	67	75	121	99	47	60
56	10	89	36	79	46	26	5
57	10	0	0	0	0	0	0
58	10	84	62	107	151	35	19
59	10	30	44	56	45	48	8
60	10	112	77	92	48	21	12

MONONGALIA COUNTY 061 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0-2,999	3,000-5,999	6,000-8,999	9,000-11,999	12,000-14,999	15,000 OR MORE
1	35	42	71	70	43	37	44
2	35	119	94	87	50	45	53
3	35	65	56	126	78	28	35
4	35	102	108	98	42	32	10
5	30	54	100	120	70	34	36
6	30	55	74	63	38	26	11
7	30	74	93	50	70	0	6
8	30	56	70	64	57	59	35
9	30	128	74	88	22	27	4
10	30	39	102	47	50	21	0
11	30	48	116	57	37	13	25
12	30	25	25	25	60	50	117
13	30	44	32	62	55	22	63
14	30	49	46	58	49	30	54
15	30	49	56	45	40	24	19
16	30	62	62	38	15	15	72
17	30	98	48	55	65	35	64
18	30	106	95	27	38	14	23
19	30	531	103	51	14	4	10
20	30	213	97	48	0	0	32
21	30	177	83	53	14	14	16
22	30	1904	157	80	34	11	20
23	30	989	134	43	10	20	0
24	30	1262	142	63	20	31	5
25	30	335	41	68	41	20	26
26	30	55	20	92	14	24	29
27	30	483	108	73	54	35	74
28	30	2589	190	102	31	47	40
29	30	43	20	24	54	45	107
30	30	29	36	20	49	24	63
31	30	70	60	93	134	125	284
32	30	149	65	74	48	20	32
33	30	243	140	157	61	38	113
34	30	146	184	89	81	10	38
35	30	95	108	133	77	37	12
2035	30	73	128	105	84	45	31
36	30	0	0	0	0	0	0
37	30	72	92	121	32	21	6
38	20	22	34	72	42	20	6
39	20	55	66	105	61	10	24
40	20	62	96	95	26	33	5
41	25	138	103	48	79	27	60
42	25	117	93	132	57	32	26
43	25	75	141	77	154	22	39
44	25	56	62	70	126	34	29
45	25	88	62	82	46	31	13
46	25	58	38	58	45	16	0
47	25	61	86	48	45	40	4
48	25	109	74	94	34	6	20
49	25	75	61	57	47	17	5
50	10	4	14	4	0	0	0
51	10	70	12	15	13	13	0
52	10	117	49	110	16	13	10
53	10	57	48	78	19	10	9
54	10	114	85	98	64	24	19
55	15	17	0	34	31	14	6
56	15	72	59	90	88	26	22
57	15	91	79	74	19	24	25
58	15	39	33	100	16	12	11
59	5	59	38	46	35	16	0
60	5	35	60	51	33	0	0

PRESTON COUNTY 077 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0-2,999	3,000-5,999	6,000-8,999	9,000-11,999	12,000-14,999	15,000 OR MORE
1	5	0	0	8	0	8	7
2	5	42	16	13	19	6	0
3	5	88	83	41	20	27	10
4	5	39	36	43	30	10	9
5	40	86	70	61	47	9	15
6	40	21	25	34	23	19	7
7	40	80	86	77	77	18	5
8	40	104	122	55	59	44	15
9	40	70	123	45	30	11	0
10	20	92	87	61	25	0	0
11	20	95	85	20	17	11	11
12	25	34	27	29	10	0	12
13	25	85	78	48	39	14	20
14	25	118	45	68	12	6	5
15	25	18	6	9	8	0	0
16	25	20	56	10	42	4	5
17	25	61	71	24	11	12	3
18	25	82	88	33	25	5	6
19	10	26	47	89	94	47	50
20	10	156	121	82	100	25	56
21	10	62	33	32	10	4	0
22	10	58	77	38	50	4	5
23	10	144	96	114	41	19	11
24	10	92	65	43	24	7	7
25	15	52	47	33	24	0	10
26	15	86	60	56	25	0	8
27	15	92	38	14	5	0	5
28	30	100	52	59	33	17	13
29	30	90	59	37	18	14	0
30	30	143	120	72	27	18	8
31	30	134	120	25	0	11	6
32	35	0	0	0	0	0	0
33	35	90	125	22	36	5	9
34	35	127	80	67	23	6	0

TAYLOR COUNTY 091 COUNT FIVE DATA QUESTION 23

ED NUMBER	MCD NUMBER	0-2,999	3,000-5,999	6,000-8,999	9,000-11,999	12,000-14,999	15,000 OR MORE
1	15	82	71	71	61	0	10
2001	15	10	0	6	0	0	5
2	15	93	64	37	29	14	11
2002	15	44	56	86	33	28	29
3	15	37	20	12	5	0	0
2003	15	23	0	14	7	0	0
4	15	34	46	24	20	39	8
5	5	83	32	54	12	21	12
6	5	57	43	81	32	26	24
7	20	41	50	40	12	5	4
8	20	43	58	55	20	6	4
9	20	86	31	52	25	0	0
10	10	92	99	71	45	23	0
11	10	83	63	31	21	0	0
2011	10	8	9	0	0	0	0
12	25	106	104	105	46	34	16
13	25	90	59	62	49	0	23
14	25	104	40	41	59	14	26
15	25	85	68	99	57	16	14
16	25	154	72	80	15	33	4
17	30	81	80	48	9	20	0
2017	30	31	5	14	13	9	3
18	30	36	19	53	0	6	3

DODDRIDGE COUNTY 017 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	2[illegible]	43.[illegible]	80.6237	39.3964	15.5	6.0	34.5
2	25	21.[illegible]	[illegible].6[illegible]	39.[illegible]629	10.[illegible]	5.5	14.5
3	15	23.4	80.9445	39.2934	12.0	7.0	5.0
4	15	20.6	80.7135	39.3479	4.0	12.0	17.0
5	4[illegible]	0.1	80.7771	39.2991			
8	4[illegible]	0.1	80.7775	39.2942			
7	4[illegible]	22.[illegible]	80.7541	39.3219	24.0	11.0	11.5
8	4[illegible]	24.1	80.7985	39.2547	11.0	0.0	7.5
9	[illegible]5	26.[illegible]	80.8545	39.2753	22.5	12.5	12.0
10	3[illegible]	3[illegible].[illegible]	80.8328	39.1662	5.0	14.0	11.0
11	1[illegible]	24.4	80.7356	39.1247	8.5	14.5	12.0
12	3[illegible]	49.3	80.6889	39.2245	25.0	19.5	7.0
13	3[illegible]	32.[illegible]	80.8006	39.2207	13.5	26.5	5.5

HARRISON COUNTY 033 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCL	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	1[illegible]	18.1	80.2733	39.4218	5.0	C.C	4.C
2	1[illegible]	[illegible].8	80.2876	39.3999			
3	1[illegible]	0.4	80.2867	39.3934			
4	1[illegible]	0.9	80.3029	39.3914			
5	1[illegible]	13.9	80.2306	39.3736	15.5	6.C	11.C
6	1[illegible]	6.[illegible]	80.2642	39.3967	14.5	3.5	7.C
7	1[illegible]	12.1	80.3107	39.3929	18.5	C.C	12.5
8	2[illegible]	[illegible].4	80.3455	39.3768			
9	2[illegible]	20.1	80.3864	39.4371	20.0	12.5	13.[illegible]
10	3[illegible]	13.6	80.3707	39.3845	21.0	4.C	6.5
11	3[illegible]	11.7	80.3490	39.3469	11.5	3.C	14.C
12	35	21.6	80.4275	39.3642	22.0	1.5	23.5
13	35	24.5	80.4947	39.4125	20.0	12.5	12.5
14	45	C.6	80.5556	39.2825			
15	45	[illegible].5	80.5691	39.2847			
16	45	26.[illegible]	80.4831	39.3231	9.C	21.C	17.C
17	45	9.2	80.5479	39.3012	11.5	4.C	6.5
18	45	18.2	80.5368	39.2544	11.5	1.5	22.5
19	15	1.3	80.3303	39.3357	5.0	2.5	C.C
20	15	1.1	80.3171	39.2888			
21	15	0.5	80.3022	39.2817			
22	15	0.5	80.3560	39.2984			
23	15	0.3	80.3607	39.2917			
24	15	0.2	80.3536	39.2963			
25	15	0.1	80.3471	39.2958			
26	15	0.2	80.3539	39.2907			
27	15	0.4	80.3340	39.2906			
28	15	0.1	80.3372	39.2872			
29	15	0.3	80.3279	39.2847			
30	15	8.[illegible]	80.3174	39.3212	3.5	C.C	8.5
31	15	1.6	80.3468	39.3145	5.0	3.C	C.C
32	15	3.0	80.3815	39.3013	5.0	C.C	1.C
33	15	1.[illegible]	80.4117	39.2980	2.5	C.C	1.5
34	15	2.4	80.4300	39.2857	20.5	2.C	4.C
35	4[illegible]	[illegible].6	80.2462	39.2933			

HARRISON COUNTY 033 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCL	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
36	40	0.7	80.2582	39.2929			
37	40	0.4	80.2499	39.2849			
38	40	0.2	80.2878	39.2581			
39	40	19.4	80.2721	39.3175	18.5	2.0	15.0
40	40	21.7	80.2159	39.2660	31.0	2.5	17.0
41	40	8.1	80.2071	39.2357	5.5	0.0	9.5
42	25	0.1	80.2905	39.2542			
43	25	25.8	80.2866	39.2792	26.0	5.0	35.0
44	25	14.0	80.2758	39.1261	5.0	9.0	12.5
45	5	1.2	80.3021	39.2692	7.7	0.0	3.5
46	5	0.6	80.3042	39.2595	7.8	0.0	3.5
47	5	0.2	80.2944	39.2605			
48	5	0.2	80.3131	39.2521			
49	5	0.2	80.3102	39.2478			
50	5	0.1	80.3180	39.2647			
51	5	0.2	80.3238	39.2601			
52	5	0.4	80.3653	39.2778			
53	5	0.1	80.3691	39.2721			
54	5	0.4	80.3612	39.2702			
55	5	0.1	80.3581	39.2778			
56	5	0.2	80.3563	39.2805			
57	5	0.2	80.3454	39.2811			
58	5	0.5	80.3385	39.2820			
59	5	0.1	80.3353	39.2783			
60	5	0.4	80.3342	39.2727			
61	5	0.1	80.3342	39.2760			
62	5	0.1	80.3268	39.2790			
63	5	0.1	80.3241	39.2825			
64	5	0.1	80.3285	39.2747			
65	5	0.2	80.3176	39.2748			
66	5	0.1	80.3178	39.2711			
67	5	5.2	80.3436	39.2551			
68	5	5.8	80.3936	39.2635	14.0	6.5	4.5
69	50	0.6	80.4007	39.2017			
70	50	12.2	80.4125	39.2436	16.5	9.0	15.5
71	50	44.2	80.4758	39.1892	14.0	47.0	23.5
72	30	0.9	80.3511	39.1611			
73	30	6.4	80.3456	39.2172	10.0	0.0	5.0
74	30	22.8	80.3794	39.1783	18.0	7.5	14.5
75	30	11.4	80.3299	39.1333	10.0	3.0	9.0

MARION COUNTY 049 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	25	0.6	80.1604	39.5325			
[illegible]	25	0.6	80.1789	39.5569			
[illegible]	25	0.3	80.2458	39.5633			
4	25	13.9	80.1217	39.5585	19.0	4.0	25.0
5	25	2.5	80.1462	39.5344	5.0	0.0	6.0
6	25	2[illegible].8	80.2262	39.5853	31.0	0.0	17.5
7	20	0.7	80.3459	39.5313			
8	20	0.1	80.3363	39.5256			
9	20	0.4	80.3361	39.5228			
10	20	35.2	80.3274	39.5283	21.0	20.5	30.0
11	20	41.8	80.4377	39.5766	23.0	32.5	34.5
12	20	16.7	80.4354	39.4948	4.5	22.0	4.0
13	15	0.3	80.2482	39.5131			
14	15	0.3	80.2240	39.4585			
15	15	0.6	80.2600	39.4530			
16	15	14.8	80.2368	39.5424	16.5	7.5	13.5
17	15	11.5	80.2921	39.5416	12.5	10.5	11.5
18	15	15.2	80.3140	39.4675	16.0	6.5	17.0
19	15	6.6	80.2733	39.4931	12.0	5.0	8.0
20	15	7.0	80.2423	39.4787	13.5	6.0	8.0
21	15	1.2	80.2426	39.4530	2.5	0.0	0.0
22	5	2.6	80.1670	39.5050	11.0	0.0	0.0
23	5	0.3	80.1327	39.4986			
24	5	0.6	80.1475	39.4947			
25	5	1.2	80.1514	39.4915			
26	5	0.3	80.1667	39.4845			
27	5	0.1	80.1549	39.4756			
28	5	0.3	80.1663	39.4848			
29	5	0.3	80.1726	39.4804			
30	5	0.3	80.1539	39.4756			
31	5	0.4	80.1615	39.4685			
32	5	0.3	80.1514	39.4682			
33	5	0.3	80.1480	39.4752			
34	5	0.1	80.1500	39.4795			
35	5	0.1	80.1379	39.4865			
36	5	0.4	80.1316	39.4923			
37	5	0.3	80.1315	39.4894			
38	5	8.5	80.1756	39.5324	10.0	1.0	12.0
39	5	4.0	80.2037	39.4885	11.5	3.0	4.5
40	35	0.9	80.1163	39.4987			
41	35	8.2	80.0963	39.5106	14.0	7.0	4.5
42	35	30.2	80.0366	39.4780	28.5	14.0	35.0
43	30	0.4	80.1190	39.4834			
44	30	0.2	80.1235	39.4798			
45	30	0.1	80.1345	39.4767			
46	30	0.1	80.1382	39.4776			
47	30	0.2	80.1386	39.4735			
48	30	0.2	80.1322	39.4746			
49	30	0.1	80.1214	39.4723			
50	30	2.2	80.1495	39.4562	7.0	0.0	0.0
51	30	6.5	80.1218	39.4573	15.0	3.0	2.5
52	30	5.7	80.0951	39.4448	10.0	0.0	5.0
53	30	15.5	80.0823	39.4185	18.5	7.0	20.0
54	10	0.4	80.1624	39.4574			
55	10	0.9	80.1716	39.4604			
56	10	0.2	80.2122	39.4602			
57	10	0.1	80.2559	39.4523			
58	10	10.1	80.1727	39.4162	19.5	4	20
59	10	3.1	80.1902	39.4486	9.0	0	4
60	10	9.5	80.2365	39.4370	11.0	3	12

MONONGALIA COUNTY 061 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	35	53.5	79.8348	39.6892	11.0	0.0	22.5
2	35	15.4	79.8639	39.6422	15.0	3.5	9.5
3	35	12.9	79.8900	39.6653	18.5	2.0	14.0
4	35	9.4	79.9471	39.6727	13.5	2.0	11.5
5	30	0.4	79.9831	39.6611			
6	30	0.5	79.9234	39.6200			
7	30	0.3	79.9523	39.6318			
8	30	0.3	79.9403	39.6316			
9	30	0.1	79.9434	39.6262			
10	30	0.1	79.9493	39.6240			
11	30	0.4	79.9431	39.6224			
12	30	0.1	79.9513	39.6185			
13	30	0.1	79.9513	39.6185			
14	30	0.2	79.9592	39.6151			
15	30	0.3	79.9635	39.6188			
16	30	0.1	79.9584	39.6234			
17	30	0.1	79.9532	39.6223			
18	30	0.1	79.9531	39.6228			
19	30	0.1	79.9547	39.6303			
20	30	0.1	79.9471	39.6298			
21	30	0.1	79.9443	39.6329			
22	30	0.2	79.9476	39.6355			
23	30	0.2	79.9551	39.6359			
24	30	0.1	79.9535	39.6396			
25	30	0.1	79.9493	39.6405			
26	30	0.1	79.9495	39.6450			
27	30	0.3	79.9593	39.6435			
28	30	0.7	79.9613	39.6493			
29	30	0.2	79.9705	39.6532			
30	30	0.2	79.9710	39.6585			
31	30	0.4	79.9664	39.6620			
32	30	0.7	79.9664	39.6660	1.0	0.0	0.5
33	30	1.6	79.9477	39.6545	6.5	1.0	3.0
34	30	3.2	79.9257	39.6446	7.5	0.0	3.5
35	30	3.4	79.8913	39.6134	10.5	0.0	8.0
2035	30	6.4	79.9178	39.5685	14.0	3.5	11.5
36	30	0.1	79.9525	39.6059			
37	20	21.2	79.8869	39.5803	22.5	0.0	29.0
38	20	21.2	79.9238	39.5652	16.5	5.0	29.0
39	20	22.1	79.9585	39.5422	25.5	6.5	47.0
40	20	22.7	80.0200	39.5300	25.0	10.0	43.5
41	25	0.4	79.9695	39.6367			
42	25	0.4	79.9718	39.6330			
43	25	0.5	79.9766	39.6360			
44	25	0.4	79.9860	39.6346			
45	25	0.3	79.9883	39.6429			
46	25	9.1	79.9894	39.6067	14.0	0.0	18.0
47	25	7.7	80.0184	39.6036	14.0	0.0	21.5
48	25	13.8	80.1007	39.5781	19.5	6.0	21.5
49	25	14.8	80.0309	39.6321	11.5	6.0	44.5
50	10	0.1	79.9922	39.6484			
51	10	0.1	80.0064	39.6577			
52	10	16.8	79.9886	39.6952	23.0	1.5	18.5
53	10	8.6	80.0419	39.6948	12.5	3.0	17.5
54	10	9.5	80.0717	39.6786	10.5	2.0	13.0
55	15	0.3	80.2117	39.7183			
56	15	26.1	80.1392	39.6444	31.0	7.0	42.0
57	15	19.8	80.1889	39.6509	23.0	7.0	17.0
58	15	15.7	80.2167	39.6585	25.0	13.0	28.5
59	5	28.0	80.2900	39.6651	18.0	6.5	16.5
60	5	29.4	80.3708	39.6878	15.0	13.0	33.5

PRESTON COUNTY 077 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

ED	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	5	0.1	79.6224	39.0658			
2	5	0.1	79.6413	39.0589			
3	5	40.3	79.5628	39.0841	19.0	15.0	40.0
4	5	53.2	79.6902	39.6689	23.0	7.5	41.0
5	40	0.5	79.7983	39.5507			
6	40	0.5	79.7986	39.5108			
7	40	4.9	79.8113	39.4393	8.5	4.5	4.0
8	40	13.4	79.8213	39.5558	19.0	0.0	19.0
9	40	30.9	79.7496	39.6556	11.0	9.5	29.0
10	30	43.4	79.6771	39.3912	18.0	13.0	33.5
11	30	44.7	79.5431	39.6078	19.5	15.0	37.0
12	25	0.2	79.6426	39.4939			
13	25	0.4	79.5424	39.4465			
14	25	0.4	79.5432	39.4411			
15	25	0.2	79.6815	39.3495			
16	25	26.8	79.5110	39.4882	23.0	9.5	38.0
17	25	42.1	79.6055	39.4817	33.0	7.0	25.0
18	25	43.1	79.5936	39.4197	18.0	7.0	19.5
19	10	0.8	79.6752	39.4710			
20	10	0.6	79.6904	39.4706			
21	10	0.5	79.7471	39.3927			
22	10	14.9	79.7194	39.4220	23.5	6.0	13.0
23	10	23.8	79.6996	39.4794	26.0	16.0	7.0
24	10	16.4	79.7666	39.4323	18.5	6.0	25.0
25	15	0.8	79.8508	39.3376			
26	15	25.2	79.8538	39.3346	29.0	3.5	29.5
27	15	16.2	79.8355	39.3809	13.0	0.0	20.0
28	30	0.3	79.6804	39.3437			
29	30	20.6	79.8371	39.3360	27.5	0.0	21.5
30	30	19.5	79.7422	39.3704	27.0	0.0	33.0
31	30	54.1	79.7616	39.2963	23.0	23.0	22.0
32	35	0.2	79.6669	39.3472			
33	35	56.1	79.5888	39.3549	35.0	8.0	3.2
34	35	42.3	79.5517	39.2844	32.0	12.5	17.5

TAYLOR COUNTY 091 AREA, MEDLIST COORDINATES, AND HIGHWAY MILEAGE (2 x CENTERLINE MILEAGE)

SE	MCD	AREA	LONGITUDE	LATITUDE	PAVED	BITUMIN	GRAVEL
1	15	0.5	80.0363	39.3433			
2001	15	0.2	80.0321	39.3471			
2	15	27.1	79.9957	39.4037	26.0	10.0	24.0
2002	15	0.5	79.9923	39.3446			
3	15	9.0	79.9238	39.3576	10.0	2.5	10.5
2003	15	0.2	79.9926	39.3421			
4	15	14.6	80.0177	39.3866	15.0	15.0	6.0
5	5	19.8	80.0996	39.3702	18.0	10.0	18.0
6	5	23.0	80.1637	39.3573	30.5	8.0	12.5
7	20	0.2	80.1296	39.2676			
8	20	3.9	80.1375	39.2520	9.0	0.0	5.0
9	20	9.4	80.1453	39.2834	11.5	3.5	0.0
10	15	17.1	80.0756	39.3089	22.0	6.5	10.5
11	15	15.3	80.0483	39.2683	10.0	2.5	4.0
2011	10	0.1	80.0345	39.3258			
12	25	0.5	80.0136	39.3445			
13	25	0.2	80.0254	39.3407			
14	25	0.6	80.0297	39.3291			
15	25	0.5	80.0237	39.3282			
16	25	0.4	80.0159	39.3338			
17	30	14.0	79.9910	39.3046	10.5	9.0	5.0
2017	30	0.4	80.0034	39.3319			
18	30	12.3	79.9358	39.3149	3.0	12.5	10.5

REQUEST FOR FEEDBACK TO
The DOT Program Of University Research

DOT-TST-77-70

YES	NO	
☐	☐	Did you find the report useful for your particular needs? If so, how?
☐	☐	Did you find the research to be of high quality?
☐	☐	Were the results of the research communicated effectively by this report?
☐	☐	Do you think this report will be valuable to workers in the field of transportation represented by the subject area of the research?
☐	☐	Are there one or more areas of the report which need strengthening? Which areas?
☐	☐	Would you be interested in receiving further reports in this area of research? If so, fill out form on other side.

Please furnish in the space below any comments you may have concerning the report. We are particularly interested in further elaboration of the above questions.

Cut Out Along This Line

COMMENTS

Thank you for your cooperation. No postage necessary if mailed in the U.S.A.

RESEARCH FEEDBACK

Your comments, please . . .

This booklet was published by the DOT Program of University Research and is intended to serve as a reference source for transportation analysts, planners, and operators. Your comments on the other side of this form will be reviewed by the persons responsible for writing and publishing this material. Feedback is extremely important in improving the quality of research results, the transfer of research information, and the communication link between the researcher and the user.

FOLD ON TWO LINES, STAPLE AND MAIL.

Fold Fold

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
Washington, D.C. 20590

Official Business

PENALTY FOR PRIVATE USE, $300

POSTAGE AND FEES PAID
DEPARTMENT OF
TRANSPORTATION
DOT 518

Office of University Research
Office of the Secretary (TST-60)
U.S. Department of Transportation
400 Seventh Street, S.W.
Washington, D.C. 20590

Fold Fold

IF YOU WISH TO BE ADDED TO THE MAIL LIST FOR FUTURE REPORTS, PLEASE FILL OUT THIS FORM.

Name _____ Title _____
Use Block Letters or Type

Department/Office/Room _____

Organization _____

Street Address _____

City _____ State _____ Zip _____

HE 18.5 .A39
no. DOT-TST-
77-70

U.S.
R

BORROWER

Form DOT F 1720.2 (8-
FORMERLY FORM DOT F 1700.

DEPARTMENT OF TRANSPORTATION
OFFICE OF THE SECRETARY
Washington, D.C. 20590

Official Business

PENALTY FOR PRIVATE USE, $300

FEES PAID

DOT LIBRARY
00011580